



Attorney Docket No. 056297-5012-01

**PATENT APPLICATION**

**MYCOBACTERIAL *RpoB* SEQUENCES**

Inventor: Thomas Gingeras  
Jorg Drenkow

Assignee: AFFYMETRIX, INC.  
3380 Central Expressway  
Santa Clara, California 95051  
a Corporation of California

Entity: Large

**MYCOBACTERIAL *RpoB* SEQUENCES****STATEMENT OF GOVERNMENT INTEREST**

[0001] The work described in this application was supported in part by grant number 1R43a140400 by the NIAID. The Government may have certain rights in this invention.

**CROSS-REFERENCE TO RELATED APPLICATIONS**

[0002] This application derives priority from USSN 60/080,616, filed April 3, 1998, and incorporated by reference. Applications USSN 08/797,812, filed February 7, 1997, now US Patent 6,228,575; USSN 60/011,339, filed Feb. February 8, 1996; USSN 60/012,631, filed March 1 1996; USSN 08/629,031, filed April 8, 1996, now abandoned; and 60/017,765, filed 15 May 15, 1996 are directed to related subject matter. These applications are specifically incorporated by reference in their entirety for all purposes.

**BACKGROUND OF THE INVENTION**Field of the Invention

[0003] This invention is directed to polymorphisms in *rpoB* genes of mycobacteria and use of the same in the identification and characterization of microorganisms.

Background of the Invention

[0004] Multidrug resistance and human immunodeficiency virus (HIV-1) infections are factors which have had a profound impact on the tuberculosis problem. An increase in the frequency of *Mycobacterium tuberculosis* strains resistant to one or more anti-mycobacterial agents has been reported, Block, et al., (1994) JAMA 271:665-671. Immunocompromised HIV-1 infected patients not infected with *M. tuberculosis* are frequently infected with *M. avium* complex (MAC) or *M. avium-M. intracellulare* (MAI) complex. These mycobacteria species are often resistant to

the drugs used to treat *M. tuberculosis*. These factors have re-emphasized the importance for the accurate determination of drug sensitivities and mycobacteria species identification.

[0005] In HIV-1 infected patients, the correct diagnosis of the mycobacterial disease is essential since treatment of *M. tuberculosis* infections differs from that called for by other mycobacteria infections, Hoffner, S.E. (1994) *Eur. J. Clin. Microbiol. Inf. Dis.* **13**:937-941. Non-tuberculosis mycobacteria commonly associated with HIV-1 infections include *M. kansasii*, *M. xenopi*, *M. fortuitum*, *M. avium* and *M. intracellulare*, Wolinsky, E., (1992) *Clin. Infect. Dis.* **15**:1-12, Shafer, R.W. and Sierra, M.F. 1992 *Clin. Infect. Dis.* **15**:161-162. Additionally, 13% of new cases (HIV-1 infected and non-infected) of *M. tuberculosis* are resistant to one of the primary anti-tuberculosis drugs (isoniazid [INH], rifampin [RIF], streptomycin [STR], ethambutol [EMB] and pyrazinamide [PZA] and 3.2% are resistant to both RIF and INH, Block, et al., *JAMA* **271**:665-671, (1994). Consequently, mycobacterial species identification and the determination of drug resistance have become central concerns during the diagnosis of mycobacterial diseases.

[0006] Methods used to detect, and to identify *Mycobacterium* species vary considerably. For detection of *Mycobacterium tuberculosis*, microscopic examination of acid-fast stained smears and cultures are still the methods of choice in most microbiological clinical laboratories. However, culture of clinical samples is hampered by the slow growth of mycobacteria. A mean time of four weeks is required before sufficient growth is obtained to enable detection and possible identification. Recently, two more rapid methods for culture have been developed involving a radiometric, Stager, C.E. et al., (1991) *J. Clin. Microbiol.* **29**:154-157, and a biphasic (broth/agar) system Sewell, et al., (1993) *J. Clin. Microbiol.* **29**:2689-2472. Once grown, cultured mycobacteria can be analyzed by lipid composition, the use of species specific antibodies, species specific DNA or RNA probes and PCR-based sequence analysis of 16S rRNA gene (Schirm, et al. (1995) *J. Clin. Microbiol.* **33**:3221-3224; Kox, et al. (1995) *J. Clin. Microbiol.* **33**:3225-3233) and IS6110 specific repetitive sequence analysis (For a review see, e.g., Small et al., P.M. and van Embden, J.D.A. (1994) *Am. Society for Microbiology*, pp. 569-582). The analysis of 16S rRNA sequences (RNA and DNA) has been the most informative molecular approach to identify *Mycobacteria* species (Jonas, et al., *J. Clin. Microbiol.* **31**:2410-

2416 (1993)). However, to obtain drug sensitivity information for the same isolate, additional protocols (culture) or alternative gene analysis is necessary.

[0007] To determine drug sensitivity information, culture methods are still the protocols of choice. *Mycobacteria* are judged to be resistant to particular drugs by use of either the standard proportional plate method or minimal inhibitory concentration (MIC) method. However, given the inherent lengthy times required by culture methods, approaches to determine drug sensitivity based on molecular genetics have been recently developed.

[0008] Because resistance to RIF in *E. coli* strains was observed to arise as a result of mutations in the *rpoB* gene, Telenti, et al., id., identified a 69 base pair (bp) region of the *M. tuberculosis rpoB* gene as the locus where RIF resistant mutations were focused. Kapur, et al., (1995) *Arch. Pathol. Lab. Med.* 119:131-138, identified additional novel mutations in the *M. tuberculosis rpoB* gene which extended this core region to 81 bp. In a detailed review on antimicrobial agent resistance in mycobacteria, Musser (*Clin. Microbiol. Rev.*, 8:496-514 (1995)), summarized all the characterized mutations and their relative frequency of occurrence in this 81 bp region of *rpoB*. Missense mutations comprise 88% of all known mutations while insertions (3 or 6 bp) and deletions (3, 6 and 9 bp) account for 4% and 8% of the remaining mutations, respectively. Approximately 90% of all RIF resistant tuberculosis isolates have been shown to have mutations in this 81 bp region. The remaining 10% are thought possibly to involve genes other than *rpoB*.

[0009] For the above reasons, it would be desirable to have simpler methods which identify and characterize microorganisms, such as *Mycobacteria*, both at the phenotypic and genotypic level. This invention fulfills that and related needs.

#### SUMMARY OF THE INVENTION

[0010] In one aspect, the invention provides isolated nucleic acids comprising at least 25, 50, 75, 100, or 200 contiguous bases from an *rpoB* sequence shown in Table 1 (SEQ ID NOS: 1-181). Some nucleic acid comprise a complete sequence shown in Table 1.

[0011] The invention further provides a set of probes perfectly complementary to and spanning such nucleic acids, preferably spanning one of the complete sequences shown in Table 1 (SEQ ID NOS: 1-181).

**[0012]** The invention further provides methods of classifying mycobacteria. Some such methods entail providing a sample comprising a mycobacterial rpoB target nucleic acid from a mycobacteria, determining the sequence of a segment of at least 50 contiguous bases from the target nucleic acid; comparing the determined sequence to at least one sequence shown in Table 1; and classifying the mycobacteria from the extent of similarity of the compared sequences. Preferably, at least 100 or 200 contiguous bases are determined from the target nucleic acid. Preferably, the determined sequence is compared with a plurality of sequences from Table 1, for example, 10, 20, 50 or all of the sequence from Table 1 (SEQ ID NOS: 1-181).

**[0013]** In other methods of classification, the identity of one or more bases in the target sequence at one or more positions corresponding to one or more of the highlighted positions in a sequence shown in Table 1 is determined. The identity of the one or more bases characterizing the species of mycobacteria that is present in the sample. In some methods, the identity of at least 10 bases in the target nucleic acid at positions corresponding to highlighted positions in a sequence shown in Table 1 is determined. In some methods, the identity of at least 20 bases in the target sequence at highlighted positions shown in Table 1 are identified. In some methods, at least 20 determined bases are compared with 20 bases occupying corresponding positions in each of at least ten sequences from Table 1.

**[0014]** In another aspect, the invention provides sequence-specific polynucleotide probes or primers that hybridizes to a segment of a mycobacterial rpoB sequence shown in Table 1 or its complement without hybridizing to the *M. tuberculosis* sequence designated ATCC9-Mtb in Table 1 or its complement, the segment including a highlighted nucleotide position shown in Table 1. In some such probes, a central position of the probe aligns with a highlighted nucleotide position shown in Table 1. In some such primers, the 3' end of the primer aligns with a highlighted nucleotide position shown in Table 1. Some probes and primers are between 10 and 50 bases long.

**[0015]** In another aspect, the invention provides a computer-readable storage medium for storing data for access by an application program being executed on a data processing system. Such a system comprises a data structure stored in the computer-readable storage medium. The data structure includes information resident in a database used by the application program and includes a plurality of records, each record comprising information identifying a polymorphism

or sequence shown in Table 1. Some records have a field identifying a base occupying a polymorphic site and a field identifying location of the polymorphic site. Some records record a contiguous segment of at least 50, 100, or 200 bases from an rpoB sequence shown in Table 1. Some storage medium comprise at least ten records each recording a contiguous segment of at least 50 bases from at least ten rpoB sequences shown in Table 1.

#### BRIEF DESCRIPTION OF THE DRAWINGS

**[0016]** Fig. 1: Computer that may be utilized to execute software embodiments of the present invention.

**[0017]** Fig. 2: A system block diagram of a typical computer system that may be used to execute software embodiments of the invention.

#### DEFINITIONS

**[0018]** A polynucleotide can be DNA or RNA, and single- or double-stranded. Polynucleotide can be naturally occurring or synthetic, and can be of any length. Preferred polynucleotide probes of the invention include contiguous segments of DNA, or their complements including any of the highlighted bases shown in Table 1. The segments are usually between 5 and 100 bases, and often between 5-10, 5-20, 10-20, 10-50, 20-50 or 20-100 bases. The highlighted site can occur within any position of the segment. Preferred polynucleotide probes are capable of binding in a base-specific manner to a complementary strand of nucleic acid. Such probes include peptide nucleic acids, as described in Nielsen et al., *Science* 254, 1497-1500 (1991), and probes having nonnaturally occurring bases.

**[0019]** The term primer refers to a single-stranded polynucleotide capable of acting as a point of initiation of template-directed DNA synthesis under appropriate conditions (*i.e.*, in the presence of four different nucleoside triphosphates and an agent for polymerization, such as, DNA or RNA polymerase or reverse transcriptase) in an appropriate buffer and at a suitable temperature. The appropriate length of a primer depends on the intended use of the primer but typically ranges from 15 to 30 nucleotides. Short primer molecules generally require cooler temperatures to form sufficiently stable hybrid complexes with the template. The term primer site refers to the area of the target DNA to which a primer hybridizes. The term primer pair

means a set of primers including a 5' upstream primer that hybridizes with the 5' end of the DNA sequence to be amplified and a 3', downstream primer that hybridizes with the complement of the 3' end of the sequence to be amplified.

**[0020]** A cDNA or cRNA is derived from an RNA if it produced by a process in which the RNA serves as a template for production of the cDNA or cRNA.

**[0021]** Hybridizations are usually performed under stringent conditions, for example, at a salt concentration of no more than 1 M and a temperature of at least 25°C. For example, conditions of 5 x SSPE (750 mM NaCl, 50 mM Na Phosphate, 5 mM EDTA, pH 7.4) and a temperature of 25-30°C are suitable for allele-specific probe hybridizations.

**[0022]** An isolated nucleic acid means an object species invention that is the predominant species present (*i.e.*, on a molar basis it is more abundant than any other individual species in the composition). Preferably, an isolated nucleic acid comprises at least about 50, 80 or 90 percent (on a molar basis) of all macromolecular species present. Most preferably, the object species is purified to essential homogeneity (contaminant species cannot be detected in the composition by conventional detection methods).

**[0023]** For sequence comparison and homology determination, typically one sequence acts as a reference sequence to which test sequences are compared. When using a sequence comparison algorithm, test and reference sequences are input into a computer, subsequence coordinates are designated, if necessary, and sequence algorithm program parameters are designated. The sequence comparison algorithm then calculates the percent sequence identity for the test sequence(s) relative to the reference sequence, based on the designated program parameters.

**[0024]** Optimal alignment of sequences for comparison can be conducted, *e.g.*, by the local homology algorithm of Smith & Waterman, *Adv. Appl. Math.* 2:482 (1981), by the homology alignment algorithm of Needleman & Wunsch, *J. Mol. Biol.* 48:443 (1970), by the search for similarity method of Pearson & Lipman, *Proc. Nat'l. Acad. Sci. USA* 85:2444 (1988), by computerized implementations of these algorithms (GAP, BESTFIT, FASTA, and TFASTA in the Wisconsin Genetics Software Package, Genetics Computer Group, 575 Science Dr., Madison, WI), or by visual inspection (*see generally*, Ausubel *et al.*, *infra*).

**[0025]** One example of algorithm that is suitable for determining percent sequence identity and sequence similarity is the BLAST algorithm, which is described in Altschul *et al.*, *J. Mol.*

*Biol.* 215:403-410 (1990). Software for performing BLAST analyses is publicly available through the National Center for Biotechnology Information. This algorithm involves first identifying high scoring sequence pairs (HSPs) by identifying short words of length  $W$  in the query sequence, which either match or satisfy some positive-valued threshold score  $T$  when aligned with a word of the same length in a database sequence.  $T$  is referred to as the neighborhood word score threshold (Altschul *et al.*, *supra*). These initial neighborhood word hits act as seeds for initiating searches to find longer HSPs containing them. The word hits are then extended in both directions along each sequence for as far as the cumulative alignment score can be increased. Cumulative scores are calculated using, for nucleotide sequences, the parameters  $M$  (reward score for a pair of matching residues; always  $> 0$ ) and  $N$  (penalty score for mismatching residues; always  $< 0$ ). For amino acid sequences, a scoring matrix is used to calculate the cumulative score. Extension of the word hits in each direction are halted when: the cumulative alignment score falls off by the quantity  $X$  from its maximum achieved value; the cumulative score goes to zero or below, due to the accumulation of one or more negative-scoring residue alignments; or the end of either sequence is reached. The BLAST algorithm parameters  $W$ ,  $T$ , and  $X$  determine the sensitivity and speed of the alignment. The BLASTN program (for nucleotide sequences) uses as defaults a wordlength ( $W$ ) of 11, an expectation ( $E$ ) of 10, a cutoff of 100,  $M=5$ ,  $N=-4$ , and a comparison of both strands. For amino acid sequences, the BLASTP program uses as defaults a wordlength ( $W$ ) of 3, an expectation ( $E$ ) of 10, and the BLOSUM62 scoring matrix (see Henikoff & Henikoff (1989) *Proc. Natl. Acad. Sci. USA* 89:10915).

**[0026]** In addition to calculating percent sequence identity, the BLAST algorithm also performs a statistical analysis of the similarity between two sequences (see, e.g., Karlin & Altschul (1993) *Proc. Nat'l. Acad. Sci. USA* 90:5873-5787). One measure of similarity provided by the BLAST algorithm is the smallest sum probability ( $P(N)$ ), which provides an indication of the probability by which a match between two nucleotide or amino acid sequences would occur by chance. For example, a nucleic acid is considered similar to a reference sequence if the smallest sum probability in a comparison of the test nucleic acid to the reference nucleic acid is less than about 0.1, more preferably less than about 0.01, and most preferably less than about 0.001.



**[0027]** The term “target nucleic acid” refers to a nucleic acid (often derived from a biological sample), to which the probe nucleic acid is designed to specifically hybridize. It is the presence or expression level of the target nucleic acid that is to be detected or quantified. The target nucleic acid has a sequence that is complementary to the nucleic acid sequence of the corresponding probe directed to the target. The term target nucleic acid may refer to the specific subsequence of a larger nucleic acid to which the probe is directed or to the overall sequence (e.g. gene or mRNA) whose expression level it is desired to detect. The difference in usage will be apparent from context.

**[0028]** “Subsequence” refers to a sequence of nucleic acids that comprise a part of a longer sequence of nucleic acids.

## DETAILED DESCRIPTION

### I. Mycobacterial Sequences of rpoB Genes

**[0029]** Table 1 shows a comparison of a substantial collection of mycobacterial strains of an about 700-nucleotide conserved region of an rpoB gene. The sequences shown in Table 1 are identified as follows: SEQ ID NOS: 1-56, respectively, are shown on pages 21, 25, 29, 33, 37, 41, 45, 49, 53, 57, 61 and 65; SEQ ID NOS: 57-112, respectively, are shown on pages 22, 26, 30, 34, 38, 42, 46, 50, 54, 58, 62 and 65; SEQ ID NOS: 113-168, respectively, are shown on pages 23, 27, 31, 35, 39, 43, 47, 51, 55, 59, 63 and 66; SEQ ID NOS: 169-181, respectively, are shown on pages 24, 28, 32, 36, 40, 44, 52, 56, 60, 64 and 68. The first sequence, designated as a reference sequence, is from *M. tuberculosis*. Nucleotides are numbered consecutively starting from the first nucleotide of the reference sequences. Other sequences are from other strains of mycobacteria. For example, the sequences designated ATCC-av, M29, M30...M104 are from *M. avium*. Sequences designated from ATT-chelnew, M11, M13, and M17 are from *M. chelonae*. Sequences designated ATCC-for, M53, M55, M56, and M74 are from *M. fortuitum*, and so forth. Complete correspondence between strain designations and strain types is shown in Table 2. Nucleotides in a mycobacterial sequence are accorded the same number as the corresponding position of the reference sequence when the two are maximally aligned. Differences between a sequence and the reference sequences are shown in highlighted type. Many of the highlighted positions are common to all tested members of a species. Other highlighted positions vary

among different isolates in a species. Both types of variation can be useful in speciation analysis.

## II. Analysis of Species Variations

### A. Preparation of Samples

**[0030]** An *rpoB* sequence is isolated from a sample of an unknown mycobacteria being tested. Nucleic acids can be isolated from mycobacteria by standard methods as described in WO 97/29212 (incorporated by reference in its entirety for all purposes). The *rpoB* sequences to be analyzed can then be isolated and amplified by means of PCR. *See generally PCR Technology: Principles and Applications for DNA Amplification* (ed. H.A. Erlich, Freeman Press, NY, NY, 1992); *PCR Protocols: A Guide to Methods and Applications* (eds. Innis, et al., Academic Press, San Diego, CA, 1990); Mattila et al., *Nucleic Acids Res.* 19, 4967 (1991); Eckert et al., *PCR Methods and Applications* 1, 17 (1991); *PCR* (eds. McPherson et al., IRL Press, Oxford); and U.S. Patent 4,683,202 (each of which is incorporated by reference for all purposes). Primers for PCR preferably flank the regions of interest *rpoB* genes, although primers to internal sites can be used if it is intended to analyze only certain sites of potential species variation. Exemplary primers are described in WO 97/29212. If necessary, additional sequences flanking the sequences shown in Table 1 can be determined using probes based on the sequences in Table 1 to isolate full-length *rpoB* sequences from the appropriate mycobacterial species.

### B. Detection of Species-Specific Variations in Target DNA

#### 1. Sequence-Specific Probes

**[0031]** The design and use of sequence-specific probes for analyzing polymorphisms is described by e.g., Saiki et al., *Nature* 324, 163-166 (1986); Dattagupta, EP 235,726, Saiki, WO 89/11548. Sequence-specific probes can be designed that hybridize to a segment of target DNA in one isolate of mycobacteria that do not isolate to a corresponding isolate in another due to the presence of allelic or species variations in the respective segments from the two sequences. Hybridization conditions should be sufficiently stringent that there is a significant difference in hybridization intensity between alleles, and preferably an essentially binary response, whereby a probe hybridizes to only one of the sequences. Some probes are designed to hybridize to a

segment of target DNA such that the site of potential sequence variation aligns with a central position (e.g., in a 15 mer at the 7 position; in a 16 mer, at either the 8 or 9 position) of the probe. This design of probe achieves good discrimination in hybridization between different allelic and species variants.

**[0032]** Sequence-specific probes are often used in pairs, one member of a pair showing a perfect match to a reference form of a target sequence and the other member showing a perfect match to a variant form. Several pairs of probes can then be immobilized on the same support for simultaneous analysis of multiple potential variations within the same target sequence.

## 2. Tiling Arrays

**[0033]** The bases occupying sites of potential variation can also be identified by hybridization to nucleic acid arrays, some example of which are described by WO 95/11995 (incorporated by reference in its entirety for all purposes). Such arrays contain a series of overlapping probes spanning a reference sequence. Any of the rpoB sequences shown in Table 1, or contiguous segments of, for example, at least 25, 50, 100 or 200 bases thereof, can serve as a reference sequence. WO 95/11995 also describes subarrays that are optimized for detection of a variant forms of a precharacterized polymorphism. Such a subarray contains probes designed to be complementary to a second reference sequence, which is a variant of the first reference sequence. The inclusion of a second group (or further groups) can be particular useful for analyzing short subsequences of the primary reference sequence in which multiple mutations are expected to occur within a short distance commensurate with the length of the probes (*i.e.*, two or more mutations within 9 to 21 bases).

## 3. Sequence-Specific Primers

**[0034]** A sequence-specific primer hybridizes to a site on target DNA overlapping a polymorphism and only primes amplification of a variant form to which the primer exhibits perfect complementarity. See Gibbs, *Nucleic Acid Res.* 17, 2427-2448 (1989). This primer is used in conjunction with a second primer which hybridizes at a distal site. Amplification proceeds from the two primers leading to a detectable product signifying the particular variant form is present. A control is usually performed with a second pair of primers, one of which

shows a single base mismatch at the site of variation and the other of which exhibits perfect complementarity to a distal site. The single-base mismatch prevents amplification and no detectable product is formed. The method works best when the mismatch is included in the 3'-most position of the primer aligned with the point of variation because this position is most destabilizing to elongation from the primer. *See, e.g.*, WO 93/22456.

#### 4. Direct-Sequencing

[0035] The direct analysis of mycobacterial sequences can be accomplished using either the dideoxy chain termination method or the Maxam Gilbert method (see Sambrook et al., *Molecular Cloning, A Laboratory Manual* (2nd Ed., CSHP, New York 1989); Zyskind et al., *Recombinant DNA Laboratory Manual*, (Acad. Press, 1988)).

### III. Methods of Use

[0036] The sequences and polymorphisms shown in Table 1 are useful for identifying the presence of mycobacteria in samples, and optionally, classifying the mycobacteria. The sample can be obtained from a patient or from a biological source, such as a food product.

[0037] The sequences shown in Table 1 can be used for design of sequence-specific probes or primers encompassing polymorphic sites as described above. These probes or primers can then be used to determine the base occupying a corresponding position in an *rpoB* sequence from an isolate in a sample under test. A base in one sequence corresponds with a base in another when the two bases occupy the same position when the two sequences are maximally aligned by one of the criteria described in Definitions.

[0038] Alternatively, the sequences shown in Table 1 can be used for design of tiling arrays in which one or more of the sequences serves as a reference sequence. At least one set of overlapping probes is designed spanning a segment of the reference sequence, as described in WO95/11995 or EP 717,113. Target sequences from samples under test can be hybridized to such arrays, optionally in combination with controls of known *rpoB* sequences. The hybridization pattern of a target sequence to such an array can be analyzed to determine the identity of bases at which the target sequence differs from the reference sequence, as described in WO 95/11995.

**[0039]** One or more of the above methods, or direct sequencing, can be used to identify the base occupying at least one and usually several (e.g., 5, 10, 15, 25, 50 or 100) sites of potential variation between the 16S RNA and/or rpoB gene in an unknown mycobacteria relative to bases occupying corresponding sites in one or more known strains of mycobacteria, such as those shown in Table 1. This analysis results in a profile of bases occupying particular sites that characterizes the mycobacterial strain under test. The profile is compared with the corresponding profiles of different mycobacterial isolates shown in e.g., Table 1. In general, the unknown mycobacterium isolate is characterized as being from the same mycobacterial species as the precharacterized isolate with which it shares the greatest similarity in base profile.

**[0040]** In some methods, the sequence of a contiguous segment of the rpoB target nucleic acid is determined in a sample under test for comparison with one or more of the sequences shown in Table 1. The mycobacteria is classified by the extent of similarity. For example, if a target nucleic acid shows greater sequence identity to rpoB sequences from one species than any other, the sample from which the target was obtained is typically classified as arising from that species.

**[0041]** Alternatively, an array of tiled probes based on a reference sequence shown in Table 1 can be used for identifying and characterizing mycobacterial sequences based on comparison of hybridization patterns. Such an array is hybridized to a 16S RNA or rpoB target sequence from a sample, and the hybridization pattern compared with the hybridization pattern of one or more control sequences. The hybridization patterns of control sequences can be historic controls, stored, for example, in a computer database, or can be contemporaneous controls performed at or near the same time as the hybridization to the target sequence. Optionally, hybridization of target and reference sequence can be performed simultaneously using different labels.

**[0042]** Method of classifying unknown mycobacterial isolate by matching the hybridization pattern of a target sequence with those of control sequences from characterized species are described in more detail in WO 97/29212 (incorporated by reference in its entirety for all purposes). In an idealized case, the detection of a particular hybridization pattern in an isolate characterizes that isolate as belonging to a particular species. This can occur when the hybridization pattern detected in the isolate is uniquely associated with a specific species. More frequently however, such an unique one-to-one correspondence is not present. Instead, the hybridization pattern observed in an isolate does not bear a unique correspondence with a

previously characterized species. However, the hybridization pattern detected is associated with a probability of the organism being screened belonging to a particular species (or not) or carrying a particular phenotypic trait (or not). As a result, analysis of an increasing number of polymorphic sites in an isolate, allows one to classify the isolated with an increasing level of confidence. Algorithms can be used to derive such composite probabilities from the comparison of multiple polymorphic forms between an isolate and references. Typically, the mathematical algorithm makes a call of the identity of the species and assign a confidence level to that call. One can determine the confidence level (>90%, >95% etc.) that one desires and the algorithm will analyze the hybridization pattern and either provide an identification or not. Occasionally, the call is that the sample may be one of two, three or more species, in which case a specific identification is not be possible. However, one of the strengths of this technique is that the rapid screening made possible by the chip-based hybridization allows one to continuously expand a database of patterns ultimately to enable the identification of species previously unidentifiable due to lack of sufficient information.

#### IV. Modified Polypeptides and Gene Sequences

**[0043]** The invention further provides variant forms of nucleic acids and corresponding proteins. The nucleic acids comprise one of the sequences described in Table 1. Some nucleic acid encode full-length variant forms of proteins. Variant proteins have the prototypical amino acid sequences of encoded by nucleic acid sequence shown in Table 1 (read so as to be in-frame with the full-length coding sequence of which it is a component).

**[0044]** Variant genes can be expressed in an expression vector in which a variant gene is operably linked to a native or other promoter. Usually, the promoter is a eukaryotic promoter for expression in a mammalian cell. The transcription regulation sequences typically include a heterologous promoter and optionally an enhancer which is recognized by the host. The selection of an appropriate promoter, for example trp, lac, phage promoters, glycolytic enzyme promoters and tRNA promoters, depends on the host selected. Commercially available expression vectors can be used. Vectors can include host-recognized replication systems, amplifiable genes, selectable markers, host sequences useful for insertion into the host genome, and the like.

**[0045]** The means of introducing the expression construct into a host cell varies depending upon the particular construction and the target host. Suitable means include fusion, conjugation, transfection, transduction, electroporation or injection, as described in Sambrook, *supra*. A wide variety of host cells can be employed for expression of the variant gene, both prokaryotic and eukaryotic. Suitable host cells include bacteria such as *E. coli*, yeast, filamentous fungi, insect cells, mammalian cells, typically immortalized, *e.g.*, mouse, CHO, human and monkey cell lines and derivatives thereof. Preferred host cells are able to process the variant gene product to produce an appropriate mature polypeptide. Processing includes glycosylation, ubiquitination, disulfide bond formation, general post-translational modification, and the like.

**[0046]** The protein may be isolated by conventional means of protein biochemistry and purification to obtain a substantially pure product, *i.e.*, 80, 95 or 99% free of cell component contaminants, as described in Jacoby, *Methods in Enzymology* Volume 104, Academic Press, New York (1984); Scopes, *Protein Purification, Principles and Practice*, 2nd Edition, Springer-Verlag, New York (1987); and Deutscher (ed), *Guide to Protein Purification, Methods in Enzymology*, Vol. 182 (1990). If the protein is secreted, it can be isolated from the supernatant in which the host cell is grown. If not secreted, the protein can be isolated from a lysate of the host cells.

**[0047]** In addition to substantially full-length polypeptides expressed by variant genes, the present invention includes biologically active fragments of the polypeptides, or analogs thereof, including organic molecules which simulate the interactions of the peptides. Biologically active fragments include any portion of the full-length polypeptide which confers a biological function on the variant gene product, including ligand binding, and antibody binding. Ligand binding includes binding by nucleic acids, proteins or polypeptides, small biologically active molecules, or large cellular structures.

**[0048]** Polyclonal and/or monoclonal antibodies that specifically bind to variant gene products but not to corresponding prototypical gene products are also provided. Antibodies can be made by injecting mice or other animals with the variant gene product or synthetic peptide fragments thereof. Monoclonal antibodies are screened as are described, for example, in Harlow & Lane, *Antibodies, A Laboratory Manual*, Cold Spring Harbor Press, New York (1988); Goding, *Monoclonal antibodies, Principles and Practice* (2d ed.) Academic Press, New York (1986).

Monoclonal antibodies are tested for specific immunoreactivity with a variant gene product and lack of immunoreactivity to the corresponding prototypical gene product. These antibodies are useful in diagnostic assays for detection of the variant form, or as an active ingredient in a pharmaceutical composition.

#### V. Kits

[0049] The invention further provides kits comprising at least one sequence-specific probe as described above. Often, the kits contain one or more pairs of sequence-specific probes hybridizing to different forms of a polymorphism. In some kits, the sequence-specific probes are provided immobilized to a substrate. For example, the same substrate can comprise sequence-specific probes for detecting at least 10, 100 or all of the variations shown in Table 1. Optional additional components of the kit include, for example, restriction enzymes, reverse-transcriptase or polymerase, the substrate nucleoside triphosphates, means used to label (for example, an avidin-enzyme conjugate and enzyme substrate and chromogen if the label is biotin), and the appropriate buffers for reverse transcription, PCR, or hybridization reactions. Usually, the kit also contains instructions for carrying out the methods.

#### VI. Computer Databases

[0050] Fig. 1 illustrates an example of a computer system that can be used to store records relating to polymorphisms of the invention and perform algorithms comparing polymorphic profiles and to classify species. Fig. 2 shows a computer system 100 which includes a monitor 102, screen 104, cabinet 106, keyboard 108, and mouse 110. Mouse 110 may have one or more buttons such as mouse buttons 112. Cabinet 106 houses a CD-ROM drive 114, a system memory and a hard drive (see Fig. 2) which can be utilized to store and retrieve software programs incorporating code that implements the present invention, data for use with the present invention, and the like. Although a CD-ROM 116 is shown as an exemplary computer readable storage medium, other computer readable storage media including floppy disks, tape, flash memory, system memory, and hard drives may be utilized. Cabinet 106 also houses familiar computer components such as a central processor, system memory, hard disk, and the like.



**[0051]** Fig. 2 shows a system block diagram of computer system 100 that may be used to execute software embodiments of the present invention. As in Fig. 1, computer system 100 includes monitor 102 and keyboard 108. Computer system 100 further includes subsystems such as a central processor 102, system memory 120, I/O controller 122, display adapter 124, removable disk 126 (e.g., CD-ROM drive), fixed disk 128 (e.g., hard drive), network interface 130, and speaker 132. Other computer systems suitable for use with the present invention may include additional or fewer subsystems. For example, another computer system can include more than one processor 102 (i.e., a multi-processor system) or a cache memory.

**[0052]** Arrows such as 134 represent the system bus architecture of computer system 100. However, these arrows are illustrative of any interconnection scheme serving to link the subsystems. For example, a local bus can be utilized to connect the central processor to the system memory and display adapter. Computer system 100 shown in Fig. 1 is but an example of a computer system suitable for use with the present invention.

**[0053]** The computer stores records relating to the polymorphisms of the record. Some such records record a polymorphism by reference to the position of a polymorphic site and the identity of base(s) occupying that site in one or more species. Some databases include records for at least ten polymorphic sites in at least ten of the sequences shown in Table 1. Some databases include records for all of the polymorphic sites in at least one of the sequences shown in Table 1. Some databases includes records for at least 100, 1000, or 2000 polymorphic sites shown in Table 1. Some databases include records for all of the polymorphic sites shown in Table 1.

**[0054]** The foregoing invention has been described in some detail by way of illustration and example, for purposes of clarity and understanding. It will be obvious to one of skill in the art that changes and modifications may be practiced within the scope of the appended claims. Therefore, it is to be understood that the above description is intended to be illustrative and not restrictive. The scope of the invention should, therefore, be determined not with reference to the above description, but should instead be determined with reference to the following appended claims, along with the full scope of equivalents to which such claims are entitled.

**[0055]** All patents, patent applications and publications cited in this application are hereby incorporated by reference in their entirety for all purposes to the same extent as if each individual patent, patent application or publication were so individually denoted.

Table 1  
BASE NOS 1-60

ATCC9-Mtb.txt	SEQ ID NO 1	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T GAT CAACA T CCGG CCG CCG
MY621.txt	SEQ ID NO 2	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
Atcc1-av.txt	SEQ ID NO 3	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M29.txt	SEQ ID NO 4	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M30.txt	SEQ ID NO 5	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M31.txt	SEQ ID NO 6	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M32.txt	SEQ ID NO 7	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M33.txt	SEQ ID NO 8	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M34.txt	SEQ ID NO 9	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M48-new.txt	SEQ ID NO 10	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M49.txt	SEQ ID NO 11	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M64 (Mav2).txt	SEQ ID NO 12	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M65 (Mav3).txt	SEQ ID NO 13	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M67 (Mav5).txt	SEQ ID NO 14	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M69 (Mav7).txt	SEQ ID NO 15	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M71 (Mav9).txt	SEQ ID NO 16	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M91.txt	SEQ ID NO 17	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M94.txt	SEQ ID NO 18	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M95.txt	SEQ ID NO 19	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M96.txt	SEQ ID NO 20	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M100.txt	SEQ ID NO 21	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M101.txt	SEQ ID NO 22	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M102.txt	SEQ ID NO 23	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M104.txt	SEQ ID NO 24	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M105.txt	SEQ ID NO 25	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M106.txt	SEQ ID NO 26	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M111.txt	SEQ ID NO 27	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M76.txt	SEQ ID NO 28	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
MY451.txt	SEQ ID NO 29	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
ATCC2-chelnew.txt	SEQ ID NO 30	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M10.txt	SEQ ID NO 31	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M11-662.txt	SEQ ID NO 32	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M12.txt	SEQ ID NO 33	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M13 2_662.txt	SEQ ID NO 34	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M14.txt	SEQ ID NO 35	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M15.txt	SEQ ID NO 36	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M16.txt	SEQ ID NO 37	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M17 2_662.txt	SEQ ID NO 38	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M50.txt	SEQ ID NO 39	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M51.txt	SEQ ID NO 40	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M115.txt	SEQ ID NO 41	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M116.txt	SEQ ID NO 42	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M119.txt	SEQ ID NO 43	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
MY109.txt	SEQ ID NO 44	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
MY200.txt	SEQ ID NO 45	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
MY207.txt	SEQ ID NO 46	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
MY209.txt	SEQ ID NO 47	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M122.txt	SEQ ID NO 48	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M123.txt	SEQ ID NO 49	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M124.txt	SEQ ID NO 50	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
Atcc3-for.txt	SEQ ID NO 51	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M53.txt	SEQ ID NO 52	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M54.txt	SEQ ID NO 53	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M55.txt	SEQ ID NO 54	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M56.txt	SEQ ID NO 55	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG
M74 (Mav12).txt	SEQ ID NO 56	CCCA GGACGT GGAG GCGGAT CACA CGG CAGACG T CCGG CCG CCG

Table 1  
BASE NOS 1-60

M77. txt	SEQ ID NO 57	CCCA GGAC GT GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M118. txt	SEQ ID NO 58	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
MY221. txt	SEQ ID NO 59	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
MY223. txt	SEQ ID NO 60	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
MY225. txt	SEQ ID NO 61	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
MY341. txt	SEQ ID NO 62	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
MY715. txt	SEQ ID NO 63	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
MY470. txt	SEQ ID NO 64	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
Atcc4-go. txt	SEQ ID NO 65	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
ATCC4-0-Gord. txt	SEQ ID NO 66	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M79(lz). txt	SEQ ID NO 67	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M79(jd). txt	SEQ ID NO 68	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M80(lg). txt	SEQ ID NO 69	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M81(l1). txt	SEQ ID NO 70	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M82(rn). txt	SEQ ID NO 71	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M83(mb). txt	SEQ ID NO 72	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M84(ow). txt	SEQ ID NO 73	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M85(lb). txt	SEQ ID NO 74	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M86(rb). txt	SEQ ID NO 75	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M87(wr). txt	SEQ ID NO 76	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M90(gordDB). txt	SEQ ID NO 77	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M126. txt	SEQ ID NO 78	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M128. txt	SEQ ID NO 79	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
MY103. txt	SEQ ID NO 80	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
MY475. txt	SEQ ID NO 81	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
MY476. txt	SEQ ID NO 82	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
MY830. txt	SEQ ID NO 83	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
Atcc5-int. txt	SEQ ID NO 84	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
ATCC5-Oint. txt	SEQ ID NO 85	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M18. txt	SEQ ID NO 86	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M19. txt	SEQ ID NO 87	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M20. txt	SEQ ID NO 88	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M21. txt	SEQ ID NO 89	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M22. txt	SEQ ID NO 90	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M23. txt	SEQ ID NO 91	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M24. txt	SEQ ID NO 92	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M25. txt	SEQ ID NO 93	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M26. txt	SEQ ID NO 94	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M27. txt	SEQ ID NO 95	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M28. txt	SEQ ID NO 96	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M107. txt	SEQ ID NO 97	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
MY107. txt	SEQ ID NO 98	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
MY112. txt	SEQ ID NO 99	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
MY312. txt	SEQ ID NO 100	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
Atcc6-kan. txt	SEQ ID NO 101	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
ATCC6-OKan. txt	SEQ ID NO 102	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M1. txt	SEQ ID NO 103	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M2. txt	SEQ ID NO 104	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M3. txt	SEQ ID NO 105	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M4. txt	SEQ ID NO 106	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M6. txt	SEQ ID NO 107	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M7. txt	SEQ ID NO 108	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M9. txt	SEQ ID NO 109	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M57. txt	SEQ ID NO 110	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M58. txt	SEQ ID NO 111	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG
M59. txt	SEQ ID NO 112	GGAG GCGAT CACA CCGCAGAC	CTGAT CAACAT CCGGCGGT	CGGT	GGCG

**BASE NOS 1-60**

[illegible]

Table 1  
BASE NOS 1-60

M38. txt	SEQ ID NO 169	CCAGGACCGTGGAGGCGGATCACACCGCAGAC	TTGATCAACATCCG	CCGTGGTGGCGG			
M39. txt	SEQ ID NO 170	CCAGGACCGTGGAGGCGGATCACACCGCAGAC	TTGATCAACATCCG	CCGTGGTGGCGG			
M40. txt	SEQ ID NO 171	CCAGGACCGTGGAGGCGGATCACACCGCAGAC	TTGATCAACATCCG	CCGTGGTGGCGG			
M41. txt	SEQ ID NO 172	CCAGGACCGTGGAGGCGGATCACACCGCAGAC	TTGATCAACATCCG	CCGTGGTGGCGG			
M42. txt	SEQ ID NO 173	CCAGGACCGTGGAGGCGGATCACACCGCAGAC	TTGATCAACATCCG	CCGTGGTGGCGG			
M43. txt	SEQ ID NO 174	CCAGGACCGTGGAGGCGGATCACACCGCAGAC	TTGATCAACATCCG	CCGTGGTGGCGG			
M44. txt	SEQ ID NO 175	CCAGGACCGTGGAGGCGGATCACACCGCAGAC	TTGATCAACATCCG	CCGTGGTGGCGG			
M45. txt	SEQ ID NO 176	CCAGGACCGTGGAGGCGGATCACACCGCAGAC	TTGATCAACATCCG	CCGTGGTGGCGG			
M46. txt	SEQ ID NO 177	CCAGGACCGTGGAGGCGGATCACACCGCAGAC	TTGATCAACATCCG	CCGTGGTGGCGG			
M47. txt	SEQ ID NO 178	CCAGGACCGTGGAGGCGGATCACACCGCAGAC	TTGATCAACATCCG	CCGTGGTGGCGG			
M68 (Mav6). txt	SEQ ID NO 179	CCAGGACCGTGGAGGCGGATCACACCGCAGAC	TTGATCAACATCCG	CCGTGGTGGCGG			
M89. txt	SEQ ID NO 180	CCAGGACCGTGGAGGCGGATCACACCGCAGAC	TTGATCAACATCCG	CCGTGGTGGCGG			
M66 (Mav4). txt	SEQ ID NO 181	CCAGGACCGTGGAGGCGGATCACACCGCAGAC	TTGATCAACATCCG	CCGTGGTGGCGG			
		10	20	30	40	50	60

Table 1  
BASE NOS 61-120

ATCC9-Mcb.txt	SEQ.ID NO 1	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
MY621.txt	SEQ.ID NO 2	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
Atcc1-av.txt	SEQ.ID NO 3	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M29.txt	SEQ.ID NO 4	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M30.txt	SEQ.ID NO 5	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M31.txt	SEQ.ID NO 6	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M32.txt	SEQ.ID NO 7	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M33.txt	SEQ.ID NO 8	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M34.txt	SEQ.ID NO 9	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M48-new.txt	SEQ.ID NO 10	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M49.txt	SEQ.ID NO 11	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M64(Mav2).txt	SEQ.ID NO 12	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M65(Mav3).txt	SEQ.ID NO 13	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M67(Mav5).txt	SEQ.ID NO 14	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M69(Mav7).txt	SEQ.ID NO 15	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M71(Mav9).txt	SEQ.ID NO 16	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M91.txt	SEQ.ID NO 17	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M94.txt	SEQ.ID NO 18	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M95.txt	SEQ.ID NO 19	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M96.txt	SEQ.ID NO 20	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M100.txt	SEQ.ID NO 21	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M101.txt	SEQ.ID NO 22	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M102.txt	SEQ.ID NO 23	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M104.txt	SEQ.ID NO 24	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M105.txt	SEQ.ID NO 25	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M106.txt	SEQ.ID NO 26	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
MY111.txt	SEQ.ID NO 27	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M76.txt	SEQ.ID NO 28	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
MY451.txt	SEQ.ID NO 29	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
ATCC2-chelnew.txt	SEQ.ID NO 30	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M10.txt	SEQ.ID NO 31	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M11-662.txt	SEQ.ID NO 32	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M12.txt	SEQ.ID NO 33	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M13_2_662.txt	SEQ.ID NO 34	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M14.txt	SEQ.ID NO 35	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M15.txt	SEQ.ID NO 36	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M16.txt	SEQ.ID NO 37	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M17_2_662.txt	SEQ.ID NO 38	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M50.txt	SEQ.ID NO 39	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M51.txt	SEQ.ID NO 40	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M115.txt	SEQ.ID NO 41	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M116.txt	SEQ.ID NO 42	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M119.txt	SEQ.ID NO 43	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M109.txt	SEQ.ID NO 44	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
MY200.txt	SEQ.ID NO 45	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
MY207.txt	SEQ.ID NO 46	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
MY209.txt	SEQ.ID NO 47	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M122.txt	SEQ.ID NO 48	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M123.txt	SEQ.ID NO 49	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M124.txt	SEQ.ID NO 50	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
Atcc3-for.txt	SEQ.ID NO 51	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M53.txt	SEQ.ID NO 52	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M54.txt	SEQ.ID NO 53	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M55.txt	SEQ.ID NO 54	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M56.txt	SEQ.ID NO 55	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC
M74(Mav12).txt	SEQ.ID NO 56	CGATCAAGGAGTTCCTCGGCAACAGCCAGCTGAGCCAAATTCATGGACCAAGAACACCCGC

Table 1  
BASE NOS 61-120

M77.txt	SEQ ID NO 57	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M118.txt	SEQ ID NO 58	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M221.txt	SEQ ID NO 59	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M223.txt	SEQ ID NO 60	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M225.txt	SEQ ID NO 61	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M341.txt	SEQ ID NO 62	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M715.txt	SEQ ID NO 63	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M7470.txt	SEQ ID NO 64	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
Atcc4-go.txt	SEQ ID NO 65	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
ATCC4-0-Gord.txt	SEQ ID NO 66	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M78(1z).txt	SEQ ID NO 67	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M79(jd).txt	SEQ ID NO 68	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M80(1g).txt	SEQ ID NO 69	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M81(1l).txt	SEQ ID NO 70	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M82(zm).txt	SEQ ID NO 71	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M83(mb).txt	SEQ ID NO 72	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M84(ow).txt	SEQ ID NO 73	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M85(1b).txt	SEQ ID NO 74	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M86(zb).txt	SEQ ID NO 75	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M87(wu).txt	SEQ ID NO 76	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M90(gordDB).txt	SEQ ID NO 77	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
m126.txt	SEQ ID NO 78	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M128.txt	SEQ ID NO 79	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
My103.txt	SEQ ID NO 80	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
MY475.txt	SEQ ID NO 81	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
MY476.txt	SEQ ID NO 82	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
MY830.txt	SEQ ID NO 83	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
Atcc5-int.txt	SEQ ID NO 84	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
ATCC5-0-int.txt	SEQ ID NO 85	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M18.txt	SEQ ID NO 86	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M19.txt	SEQ ID NO 87	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M20.txt	SEQ ID NO 88	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M21.txt	SEQ ID NO 89	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M22.txt	SEQ ID NO 90	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M23.txt	SEQ ID NO 91	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M24.txt	SEQ ID NO 92	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M25.txt	SEQ ID NO 93	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M26.txt	SEQ ID NO 94	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M27.txt	SEQ ID NO 95	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M28.txt	SEQ ID NO 96	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M107.txt	SEQ ID NO 97	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
MY107.txt	SEQ ID NO 98	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
MY112.txt	SEQ ID NO 99	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
MY312.txt	SEQ ID NO 100	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
Atcc6-kan.txt	SEQ ID NO 101	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
ATCC6-0kan.txt	SEQ ID NO 102	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M1.txt	SEQ ID NO 103	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M2.txt	SEQ ID NO 104	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M3.txt	SEQ ID NO 105	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M4.txt	SEQ ID NO 106	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M6.txt	SEQ ID NO 107	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M7.txt	SEQ ID NO 108	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M9.txt	SEQ ID NO 109	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M57.txt	SEQ ID NO 110	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M58.txt	SEQ ID NO 111	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC
M59.txt	SEQ ID NO 112	CGATCAAGGAGTTCTTCGGCACCCAGCCAGCTGTGTCATGGACCAAGAACACCCGC





Table 1  
BASE NOS 61-120

M38. txt	SEQ ID NO 169	CGATCAAGGAGTTCCTTCGGCACCGAGCCAGCTG	CGA	TTTCATGGA	CAGAACAAACCCGC	
M39. txt	SEQ ID NO 170	CGATCAAGGAGTTCCTTCGGCACCGAGCCAGCTG	CGA	TTTCATGGA	CAGAACAAACCCGC	
M40. txt	SEQ ID NO 171	CGATCAAGGAGTTCCTTCGGCACCGAGCCAGCTG	CGA	TTTCATGGA	CAGAACAAACCCGC	
M41. txt	SEQ ID NO 172	CGATCAAGGAGTTCCTTCGGCACCGAGCCAGCTG	CGA	TTTCATGGA	CAGAACAAACCCGC	
M42. txt	SEQ ID NO 173	CGATCAAGGAGTTCCTTCGGCACCGAGCCAGCTG	CGA	TTTCATGGA	CAGAACAAACCCGC	
M43. txt	SEQ ID NO 174	CGATCAAGGAGTTCCTTCGGCACCGAGCCAGCTG	CGA	TTTCATGGA	CAGAACAAACCCGC	
M44. txt	SEQ ID NO 175	CGATCAAGGAGTTCCTTCGGCACCGAGCCAGCTG	CGA	TTTCATGGA	CAGAACAAACCCGC	
M45. txt	SEQ ID NO 176	CGATCAAGGAGTTCCTTCGGCACCGAGCCAGCTG	CGA	TTTCATGGA	CAGAACAAACCCGC	
M46. txt	SEQ ID NO 177	CGATCAAGGAGTTCCTTCGGCACCGAGCCAGCTG	CGA	TTTCATGGA	CAGAACAAACCCGC	
M47. txt	SEQ ID NO 178	CGATCAAGGAGTTCCTTCGGCACCGAGCCAGCTG	CGA	TTTCATGGA	CAGAACAAACCCGC	
M48 (Mav6). txt	SEQ ID NO 179	CGATCAAGGAGTTCCTTCGGCACCGAGCCAGCTG	CGA	TTTCATGGA	CAGAACAAACCCGC	
M49. txt	SEQ ID NO 180	CGATCAAGGAGTTCCTTCGGCACCGAGCCAGCTG	CGA	TTTCATGGA	CAGAACAAACCCGC	
M56 (Mav4). txt	SEQ ID NO 181	CGATCAAGGAGTTCCTTCGGCACCGAGCCAGCTG	CGA	TTTCATGGA	CAGAACAAACCCGC	
			90	100	110	120



Table 1  
BASE NOS 121-180

M77.txt	SEQ ID NO 57	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M118.txt	SEQ ID NO 58	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
MY221.txt	SEQ ID NO 59	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
MY223.txt	SEQ ID NO 60	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
MY225.txt	SEQ ID NO 61	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
My341.txt	SEQ ID NO 62	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
My715.txt	SEQ ID NO 63	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
MY470.txt	SEQ ID NO 64	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
Atcc6-go.txt	SEQ ID NO 65	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
ATCC4-0-Gord.txt	SEQ ID NO 66	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M78(1z).txt	SEQ ID NO 67	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M79(jd).txt	SEQ ID NO 68	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M80(lg).txt	SEQ ID NO 69	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M81(1l).txt	SEQ ID NO 70	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M82(rn).txt	SEQ ID NO 71	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M83(mb).txt	SEQ ID NO 72	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M84(ow).txt	SEQ ID NO 73	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M85(lb).txt	SEQ ID NO 74	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M86(xb).txt	SEQ ID NO 75	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M87(wm).txt	SEQ ID NO 76	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M90(gordb).txt	SEQ ID NO 77	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
m126.txt	SEQ ID NO 78	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M128.txt	SEQ ID NO 79	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
My103.txt	SEQ ID NO 80	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
MY475.txt	SEQ ID NO 81	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
MY476.txt	SEQ ID NO 82	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
MY830.txt	SEQ ID NO 83	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
Atcc5-int.txt	SEQ ID NO 84	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
ATCC5-Oint.txt	SEQ ID NO 85	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M18.txt	SEQ ID NO 86	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M19.txt	SEQ ID NO 87	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M20.txt	SEQ ID NO 88	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M21.txt	SEQ ID NO 89	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M22.txt	SEQ ID NO 90	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M23.txt	SEQ ID NO 91	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M24.txt	SEQ ID NO 92	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M25.txt	SEQ ID NO 93	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M26.txt	SEQ ID NO 94	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M27.txt	SEQ ID NO 95	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M28.txt	SEQ ID NO 96	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M107.txt	SEQ ID NO 97	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
MY112.txt	SEQ ID NO 98	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
MY312.txt	SEQ ID NO 99	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
Atcc6-han.txt	SEQ ID NO 100	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
ATCC6-Okn.txt	SEQ ID NO 101	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M1.txt	SEQ ID NO 102	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M2.txt	SEQ ID NO 103	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M3.txt	SEQ ID NO 104	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M4.txt	SEQ ID NO 105	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M6.txt	SEQ ID NO 106	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M7.txt	SEQ ID NO 107	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M9.txt	SEQ ID NO 108	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M57.txt	SEQ ID NO 109	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M58.txt	SEQ ID NO 110	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
M59.txt	SEQ ID NO 111	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG
	SEQ ID NO 112	TGT CCGGG	TGACCCACAAAGCG	CTGTGTGGGCGCTGGG	CCCCGGCGGCTCTGTCT	CGTG



## Table 1

M38.txt	SEQ.D\NO 169
M39.txt	SEQ.D\NO 170
M40.txt	SEQ.D\NO 171
M41.txt	SEQ.D\NO 172
M42.txt	SEQ.D\NO 173
M43.txt	SEQ.D\NO 174
M44.txt	SEQ.D\NO 175
M45.txt	SEQ.D\NO 177
M46.txt	SEQ.D\NO 178
M47.txt	SEQ.D\NO 178
M68 (May6).txt	SEQ.D\NO 179
M89.txt	SEQ.D\NO 180
M66 (May4).txt	SEQ.D\NO 181



## Table 1

M77.txt	SEQ.ID NO 57	AGCGG	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M118.txt	SEQ.ID NO 58	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M221.txt	SEQ.ID NO 59	AGCGG	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
MY223.txt	SEQ.ID NO 60	AGCGG	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
MY225.txt	SEQ.ID NO 61	AGCGG	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
MY341.txt	SEQ.ID NO 62	AGCGG	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
MY715.txt	SEQ.ID NO 63	AGCGG	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
MY470.txt	SEQ.ID NO 64	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
Atccc4-go.txt	SEQ.ID NO 65	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
ATCC4-0-Gord.txt	SEQ.ID NO 66	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M78(1z).txt	SEQ.ID NO 67	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M79(jd).txt	SEQ.ID NO 68	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M80(lg).txt	SEQ.ID NO 69	AGCGG	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M81(1l).txt	SEQ.ID NO 70	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M82(rz).txt	SEQ.ID NO 71	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M83(mb).txt	SEQ.ID NO 72	AGCGG	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M84(ov).txt	SEQ.ID NO 73	AGCGG	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M85(1b).txt	SEQ.ID NO 74	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M86(zb).txt	SEQ.ID NO 75	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M87(wr).txt	SEQ.ID NO 76	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M90(gordDB).txt	SEQ.ID NO 77	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
m126.txt	SEQ.ID NO 78	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M128.txt	SEQ.ID NO 79	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
MY103.txt	SEQ.ID NO 80	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
MY475.txt	SEQ.ID NO 81	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
MY476.txt	SEQ.ID NO 82	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
MY830.txt	SEQ.ID NO 83	AGCGG	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
Atcc5-int.txt	SEQ.ID NO 84	AGCGG	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
ATCC5-0int.txt	SEQ.ID NO 85	AGCGG	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M18.txt	SEQ.ID NO 86	AGCGG	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M19.txt	SEQ.ID NO 87	AGCGG	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M20.txt	SEQ.ID NO 88	AGCGG	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M21.txt	SEQ.ID NO 89	AGCGG	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M22.txt	SEQ.ID NO 90	AGCGG	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M23.txt	SEQ.ID NO 91	AGCGG	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M24.txt	SEQ.ID NO 92	AGCGG	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M25.txt	SEQ.ID NO 93	AGCGG	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M26.txt	SEQ.ID NO 94	AGCGG	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M27.txt	SEQ.ID NO 95	AGCGG	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M28.txt	SEQ.ID NO 96	AGCGG	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M107.txt	SEQ.ID NO 97	AGCGG	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
MY107.txt	SEQ.ID NO 98	AGCGG	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
MY112.txt	SEQ.ID NO 99	AGCGG	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
MY312.txt	SEQ.ID NO 100	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
Atcc6-kan.txt	SEQ.ID NO 101	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
ATCC6-0Kan.txt	SEQ.ID NO 102	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M1.txt	SEQ.ID NO 103	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M2.txt	SEQ.ID NO 104	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M3.txt	SEQ.ID NO 105	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M4.txt	SEQ.ID NO 106	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M6.txt	SEQ.ID NO 107	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M7.txt	SEQ.ID NO 108	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M9.txt	SEQ.ID NO 109	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M57.txt	SEQ.ID NO 110	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M58.txt	SEQ.ID NO 111	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG
M59.txt	SEQ.ID NO 112	AGCGT	GCCGGG	CT	GAGGT	CCGCG	GACGT	GCAC	CT	CGA	CGC	CACT	ACGGCCG	ATGT	GCCCGG



**Table 1**  
**BASE NOS 181-240**

[illegible]



Table 1

SEQ ID NO 1	ATCC9-MtB.txt	SEQ ID NO 17	SEQ ID NO 26
SEQ ID NO 2	MY621.txt	SEQ ID NO 18	SEQ ID NO 27
SEQ ID NO 3	Atcc1-av.txt	SEQ ID NO 19	SEQ ID NO 28
SEQ ID NO 4	M29.txt	SEQ ID NO 20	SEQ ID NO 29
SEQ ID NO 5	M30.txt	SEQ ID NO 21	SEQ ID NO 30
SEQ ID NO 6	M31.txt	SEQ ID NO 22	SEQ ID NO 31
SEQ ID NO 7	M32.txt	SEQ ID NO 23	SEQ ID NO 32
SEQ ID NO 8	M33.txt	SEQ ID NO 24	SEQ ID NO 33
SEQ ID NO 9	M34.txt	SEQ ID NO 25	SEQ ID NO 34
SEQ ID NO 10	M48-new.txt	SEQ ID NO 26	SEQ ID NO 35
SEQ ID NO 11	M49.txt	SEQ ID NO 27	SEQ ID NO 36
SEQ ID NO 12	M64 (Nav2).txt	SEQ ID NO 28	SEQ ID NO 37
SEQ ID NO 13	M65 (Nav3).txt	SEQ ID NO 29	SEQ ID NO 38
SEQ ID NO 14	M67 (Nav5).txt	SEQ ID NO 30	SEQ ID NO 39
SEQ ID NO 15	M69 (Nav7).txt	SEQ ID NO 31	SEQ ID NO 40
SEQ ID NO 16	M71 (Nav9).txt	SEQ ID NO 32	SEQ ID NO 41
SEQ ID NO 17	M91.txt	SEQ ID NO 33	SEQ ID NO 42
SEQ ID NO 18	M94.txt	SEQ ID NO 34	SEQ ID NO 43
SEQ ID NO 19	M95.txt	SEQ ID NO 35	SEQ ID NO 44
SEQ ID NO 20	M96.txt	SEQ ID NO 36	SEQ ID NO 45
SEQ ID NO 21	M100.txt	SEQ ID NO 37	SEQ ID NO 46
SEQ ID NO 22	M101.txt	SEQ ID NO 38	SEQ ID NO 47
SEQ ID NO 23	M102.txt	SEQ ID NO 39	SEQ ID NO 48
SEQ ID NO 24	M104.txt	SEQ ID NO 40	SEQ ID NO 49
SEQ ID NO 25	M105.txt	SEQ ID NO 41	SEQ ID NO 50
SEQ ID NO 26	M106.txt	SEQ ID NO 42	SEQ ID NO 51
SEQ ID NO 27	MY111.txt	SEQ ID NO 43	SEQ ID NO 52
SEQ ID NO 28	M76.txt	SEQ ID NO 44	SEQ ID NO 53
SEQ ID NO 29	MY451.txt	SEQ ID NO 45	SEQ ID NO 54
SEQ ID NO 30	ATCC2-chelnew.txt	SEQ ID NO 46	SEQ ID NO 55
SEQ ID NO 31	M10.txt	SEQ ID NO 47	
SEQ ID NO 32	M11-662.txt	SEQ ID NO 48	
SEQ ID NO 33	M12.txt	SEQ ID NO 49	
SEQ ID NO 34	M13 2 662.txt	SEQ ID NO 50	
SEQ ID NO 35	M14.txt	SEQ ID NO 51	
SEQ ID NO 36	M15.txt	SEQ ID NO 52	
SEQ ID NO 37	M16.txt	SEQ ID NO 53	
SEQ ID NO 38	M17 2 662.txt	SEQ ID NO 54	
SEQ ID NO 39	M50.txt	SEQ ID NO 55	
SEQ ID NO 40	M51.txt		
SEQ ID NO 41	M115.txt		
SEQ ID NO 42	M116.txt		
SEQ ID NO 43	M119.txt		
SEQ ID NO 44	MY109.txt		
SEQ ID NO 45	MY200.txt		
SEQ ID NO 46	MY207.txt		
SEQ ID NO 47	MY209.txt		
SEQ ID NO 48	M122.txt		
SEQ ID NO 49	M124.txt		
SEQ ID NO 50	Atcc3-for.txt		
SEQ ID NO 51	M53.txt		
SEQ ID NO 52	M54.txt		
SEQ ID NO 53	M55.txt		
SEQ ID NO 54	M56.txt		
SEQ ID NO 55	M74 (Nav12).txt		
SEQ ID NO 56			

M77.txt	SEQ.ID.NO.57	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M118.txt	SEQ.ID.NO.58	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M221.txt	SEQ.ID.NO.59	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M223.txt	SEQ.ID.NO.60	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M225.txt	SEQ.ID.NO.61	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
My341.txt	SEQ.ID.NO.62	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
My715.txt	SEQ.ID.NO.63	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M1470.txt	SEQ.ID.NO.64	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
Atcc4-go.txt	SEQ.ID.NO.65	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
ATCC4-0-Gord.txt	SEQ.ID.NO.66	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M78(1z).txt	SEQ.ID.NO.67	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M79(jd).txt	SEQ.ID.NO.68	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M80(1g).txt	SEQ.ID.NO.69	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M81(1l).txt	SEQ.ID.NO.70	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M82(fm).txt	SEQ.ID.NO.71	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M83(mb).txt	SEQ.ID.NO.72	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M84(ow).txt	SEQ.ID.NO.73	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M85(lb).txt	SEQ.ID.NO.74	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M86(xb).txt	SEQ.ID.NO.75	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M87(w).txt	SEQ.ID.NO.76	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M90(gordDB).txt	SEQ.ID.NO.77	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
m126.txt	SEQ.ID.NO.78	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M128.txt	SEQ.ID.NO.79	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
My103.txt	SEQ.ID.NO.80	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
MY475.txt	SEQ.ID.NO.81	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
MY476.txt	SEQ.ID.NO.82	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
MY478.txt	SEQ.ID.NO.83	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
MY830.txt	SEQ.ID.NO.84	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
Atcc5-int.txt	SEQ.ID.NO.85	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
ATCC5-0int.txt	SEQ.ID.NO.86	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M18.txt	SEQ.ID.NO.87	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M19.txt	SEQ.ID.NO.88	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M20.txt	SEQ.ID.NO.89	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M21.txt	SEQ.ID.NO.90	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M22.txt	SEQ.ID.NO.91	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M23.txt	SEQ.ID.NO.92	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M24.txt	SEQ.ID.NO.93	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M25.txt	SEQ.ID.NO.94	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M26.txt	SEQ.ID.NO.95	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M27.txt	SEQ.ID.NO.96	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M28.txt	SEQ.ID.NO.97	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M107.txt	SEQ.ID.NO.98	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
MY107.txt	SEQ.ID.NO.99	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
MY112.txt	SEQ.ID.NO.100	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
MY312.txt	SEQ.ID.NO.101	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
Atcc6-kan.txt	SEQ.ID.NO.102	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
ATCC6-0kan.txt	SEQ.ID.NO.103	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M1.txt	SEQ.ID.NO.104	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M2.txt	SEQ.ID.NO.105	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M3.txt	SEQ.ID.NO.106	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M4.txt	SEQ.ID.NO.107	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M6.txt	SEQ.ID.NO.108	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M7.txt	SEQ.ID.NO.109	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M9.txt	SEQ.ID.NO.110	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M57.txt	SEQ.ID.NO.111	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M58.txt	SEQ.ID.NO.112	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG
M59.txt	SEQ.ID.NO.12	TGAGACCCCTGAGGGG	CCGAAACATCGGCTCTGATCGGCTCGCTGTTCGGTGTACGCGCGGG

## Table 1

SEQ.ID NO 110	M60. txt	SEQ.ID NO 130	SEQ.ID NO 143	SEQ.ID NO 150	SEQ.ID NO 157	SEQ.ID NO 164	SEQ.ID NO 171	SEQ.ID NO 178	SEQ.ID NO 185	SEQ.ID NO 192	SEQ.ID NO 199	SEQ.ID NO 206	SEQ.ID NO 213	SEQ.ID NO 220	SEQ.ID NO 227	SEQ.ID NO 234	SEQ.ID NO 241	SEQ.ID NO 248	SEQ.ID NO 255	SEQ.ID NO 262	SEQ.ID NO 269	SEQ.ID NO 276	SEQ.ID NO 283	SEQ.ID NO 290	SEQ.ID NO 297	SEQ.ID NO 304	SEQ.ID NO 311	SEQ.ID NO 318	SEQ.ID NO 325	SEQ.ID NO 332	SEQ.ID NO 339	SEQ.ID NO 346	SEQ.ID NO 353	SEQ.ID NO 360	SEQ.ID NO 367	SEQ.ID NO 374	SEQ.ID NO 381	SEQ.ID NO 388	SEQ.ID NO 395	SEQ.ID NO 402	SEQ.ID NO 409	SEQ.ID NO 416	SEQ.ID NO 423	SEQ.ID NO 430	SEQ.ID NO 437	SEQ.ID NO 444	SEQ.ID NO 451	SEQ.ID NO 458	SEQ.ID NO 465	SEQ.ID NO 472	SEQ.ID NO 479	SEQ.ID NO 486	SEQ.ID NO 493	SEQ.ID NO 500	SEQ.ID NO 507	SEQ.ID NO 514	SEQ.ID NO 521	SEQ.ID NO 528	SEQ.ID NO 535	SEQ.ID NO 542	SEQ.ID NO 549	SEQ.ID NO 556	SEQ.ID NO 563	SEQ.ID NO 570	SEQ.ID NO 577	SEQ.ID NO 584	SEQ.ID NO 591	SEQ.ID NO 598	SEQ.ID NO 605	SEQ.ID NO 612	SEQ.ID NO 619	SEQ.ID NO 626	SEQ.ID NO 633	SEQ.ID NO 640	SEQ.ID NO 647	SEQ.ID NO 654	SEQ.ID NO 661	SEQ.ID NO 668	SEQ.ID NO 675	SEQ.ID NO 682	SEQ.ID NO 689	SEQ.ID NO 696	SEQ.ID NO 703	SEQ.ID NO 710	SEQ.ID NO 717	SEQ.ID NO 724	SEQ.ID NO 731	SEQ.ID NO 738	SEQ.ID NO 745	SEQ.ID NO 752	SEQ.ID NO 759	SEQ.ID NO 766	SEQ.ID NO 773	SEQ.ID NO 780	SEQ.ID NO 787	SEQ.ID NO 794	SEQ.ID NO 801	SEQ.ID NO 808	SEQ.ID NO 815	SEQ.ID NO 822	SEQ.ID NO 829	SEQ.ID NO 836	SEQ.ID NO 843	SEQ.ID NO 850	SEQ.ID NO 857	SEQ.ID NO 864	SEQ.ID NO 871	SEQ.ID NO 878	SEQ.ID NO 885	SEQ.ID NO 892	SEQ.ID NO 899	SEQ.ID NO 906	SEQ.ID NO 913	SEQ.ID NO 920	SEQ.ID NO 927	SEQ.ID NO 934	SEQ.ID NO 941	SEQ.ID NO 948	SEQ.ID NO 955	SEQ.ID NO 962	SEQ.ID NO 969	SEQ.ID NO 976	SEQ.ID NO 983	SEQ.ID NO 990	SEQ.ID NO 997	SEQ.ID NO 1004	SEQ.ID NO 1011	SEQ.ID NO 1018	SEQ.ID NO 1025	SEQ.ID NO 1032	SEQ.ID NO 1039	SEQ.ID NO 1046	SEQ.ID NO 1053	SEQ.ID NO 1060	SEQ.ID NO 1067	SEQ.ID NO 1074	SEQ.ID NO 1081	SEQ.ID NO 1088	SEQ.ID NO 1095	SEQ.ID NO 1102	SEQ.ID NO 1109	SEQ.ID NO 1116	SEQ.ID NO 1123	SEQ.ID NO 1130	SEQ.ID NO 1137	SEQ.ID NO 1144	SEQ.ID NO 1151	SEQ.ID NO 1158	SEQ.ID NO 1165	SEQ.ID NO 1172	SEQ.ID NO 1179	SEQ.ID NO 1186	SEQ.ID NO 1193	SEQ.ID NO 1200	SEQ.ID NO 1207	SEQ.ID NO 1214	SEQ.ID NO 1221	SEQ.ID NO 1228	SEQ.ID NO 1235	SEQ.ID NO 1242	SEQ.ID NO 1249	SEQ.ID NO 1256	SEQ.ID NO 1263	SEQ.ID NO 1270	SEQ.ID NO 1277	SEQ.ID NO 1284	SEQ.ID NO 1291	SEQ.ID NO 1298	SEQ.ID NO 1305	SEQ.ID NO 1312	SEQ.ID NO 1319	SEQ.ID NO 1326	SEQ.ID NO 1333	SEQ.ID NO 1340	SEQ.ID NO 1347	SEQ.ID NO 1354	SEQ.ID NO 1361	SEQ.ID NO 1368	SEQ.ID NO 1375	SEQ.ID NO 1382	SEQ.ID NO 1389	SEQ.ID NO 1396	SEQ.ID NO 1403	SEQ.ID NO 1410	SEQ.ID NO 1417	SEQ.ID NO 1424	SEQ.ID NO 1431	SEQ.ID NO 1438	SEQ.ID NO 1445	SEQ.ID NO 1452	SEQ.ID NO 1459	SEQ.ID NO 1466	SEQ.ID NO 1473	SEQ.ID NO 1480	SEQ.ID NO 1487	SEQ.ID NO 1494	SEQ.ID NO 1501	SEQ.ID NO 1508	SEQ.ID NO 1515	SEQ.ID NO 1522	SEQ.ID NO 1529	SEQ.ID NO 1536	SEQ.ID NO 1543	SEQ.ID NO 1550	SEQ.ID NO 1557	SEQ.ID NO 1564	SEQ.ID NO 1571	SEQ.ID NO 1578	SEQ.ID NO 1585	SEQ.ID NO 1592	SEQ.ID NO 1599	SEQ.ID NO 1606	SEQ.ID NO 1613	SEQ.ID NO 1620	SEQ.ID NO 1627	SEQ.ID NO 1634	SEQ.ID NO 1641	SEQ.ID NO 1648	SEQ.ID NO 1655	SEQ.ID NO 1662	SEQ.ID NO 1669	SEQ.ID NO 1676	SEQ.ID NO 1683	SEQ.ID NO 1690	SEQ.ID NO 1697	SEQ.ID NO 1704	SEQ.ID NO 1711	SEQ.ID NO 1718	SEQ.ID NO 1725	SEQ.ID NO 1732	SEQ.ID NO 1739	SEQ.ID NO 1746	SEQ.ID NO 1753	SEQ.ID NO 1760	SEQ.ID NO 1767	SEQ.ID NO 1774	SEQ.ID NO 1781	SEQ.ID NO 1788	SEQ.ID NO 1795	SEQ.ID NO 1802	SEQ.ID NO 1809	SEQ.ID NO 1816	SEQ.ID NO 1823	SEQ.ID NO 1830	SEQ.ID NO 1837	SEQ.ID NO 1844	SEQ.ID NO 1851	SEQ.ID NO 1858	SEQ.ID NO 1865	SEQ.ID NO 1872	SEQ.ID NO 1879	SEQ.ID NO 1886	SEQ.ID NO 1893	SEQ.ID NO 1900	SEQ.ID NO 1907	SEQ.ID NO 1914	SEQ.ID NO 1921	SEQ.ID NO 1928	SEQ.ID NO 1935	SEQ.ID NO 1942	SEQ.ID NO 1949	SEQ.ID NO 1956	SEQ.ID NO 1963	SEQ.ID NO 1970	SEQ.ID NO 1977	SEQ.ID NO 1984	SEQ.ID NO 1991	SEQ.ID NO 1998	SEQ.ID NO 2005	SEQ.ID NO 2012	SEQ.ID NO 2019	SEQ.ID NO 2026	SEQ.ID NO 2033	SEQ.ID NO 2040	SEQ.ID NO 2047	SEQ.ID NO 2054	SEQ.ID NO 2061	SEQ.ID NO 2068	SEQ.ID NO 2075	SEQ.ID NO 2082	SEQ.ID NO 2089	SEQ.ID NO 2096	SEQ.ID NO 2103	SEQ.ID NO 2110	SEQ.ID NO 2117	SEQ.ID NO 2124	SEQ.ID NO 2131	SEQ.ID NO 2138	SEQ.ID NO 2145	SEQ.ID NO 2152	SEQ.ID NO 2159	SEQ.ID NO 2166	SEQ.ID NO 2173	SEQ.ID NO 2180	SEQ.ID NO 2187	SEQ.ID NO 2194	SEQ.ID NO 2201	SEQ.ID NO 2208	SEQ.ID NO 2215	SEQ.ID NO 2222	SEQ.ID NO 2229	SEQ.ID NO 2236	SEQ.ID NO 2243	SEQ.ID NO 2250	SEQ.ID NO 2257	SEQ.ID NO 2264	SEQ.ID NO 2271	SEQ.ID NO 2278	SEQ.ID NO 2285	SEQ.ID NO 2292	SEQ.ID NO 2299	SEQ.ID NO 2306	SEQ.ID NO 2313	SEQ.ID NO 2320	SEQ.ID NO 2327	SEQ.ID NO 2334	SEQ.ID NO 2341	SEQ.ID NO 2348	SEQ.ID NO 2355	SEQ.ID NO 2362	SEQ.ID NO 2369	SEQ.ID NO 2376	SEQ.ID NO 2383	SEQ.ID NO 2390	SEQ.ID NO 2397	SEQ.ID NO 2404	SEQ.ID NO 2411	SEQ.ID NO 2418	SEQ.ID NO 2425	SEQ.ID NO 2432	SEQ.ID NO 2439	SEQ.ID NO 2446	SEQ.ID NO 2453	SEQ.ID NO 2460	SEQ.ID NO 2467	SEQ.ID NO 2474	SEQ.ID NO 2481	SEQ.ID NO 2488	SEQ.ID NO 2495	SEQ.ID NO 2502	SEQ.ID NO 2509	SEQ.ID NO 2516	SEQ.ID NO 2523	SEQ.ID NO 2530	SEQ.ID NO 2537	SEQ.ID NO 2544	SEQ.ID NO 2551	SEQ.ID NO 2558	SEQ.ID NO 2565	SEQ.ID NO 2572	SEQ.ID NO 2579	SEQ.ID NO 2586	SEQ.ID NO 2593	SEQ.ID NO 2600	SEQ.ID NO 2607	SEQ.ID NO 2614	SEQ.ID NO 2621	SEQ.ID NO 2628	SEQ.ID NO 2635	SEQ.ID NO 2642	SEQ.ID NO 2649	SEQ.ID NO 2656	SEQ.ID NO 2663	SEQ.ID NO 2670	SEQ.ID NO 2677	SEQ.ID NO 2684	SEQ.ID NO 2691	SEQ.ID NO 2698	SEQ.ID NO 2705	SEQ.ID NO 2712	SEQ.ID NO 2719	SEQ.ID NO 2726	SEQ.ID NO 2733	SEQ.ID NO 2740	SEQ.ID NO 2747	SEQ.ID NO 2754	SEQ.ID NO 2761	SEQ.ID NO 2768	SEQ.ID NO 2775	SEQ.ID NO 2782	SEQ.ID NO 2789	SEQ.ID NO 2796	SEQ.ID NO 2803	SEQ.ID NO 2810	SEQ.ID NO 2817	SEQ.ID NO 2824	SEQ.ID NO 2831	SEQ.ID NO 2838	SEQ.ID NO 2845	SEQ.ID NO 2852	SEQ.ID NO 2859	SEQ.ID NO 2866	SEQ.ID NO 2873	SEQ.ID NO 2880	SEQ.ID NO 2887	SEQ.ID NO 2894	SEQ.ID NO 2901	SEQ.ID NO 2908	SEQ.ID NO 2915	SEQ.ID NO 2922	SEQ.ID NO 2929	SEQ.ID NO 2936	SEQ.ID NO 2943	SEQ.ID NO 2950	SEQ.ID NO 2957	SEQ.ID NO 2964	SEQ.ID NO 2971	SEQ.ID NO 2978	SEQ.ID NO 2985	SEQ.ID NO 2992	SEQ.ID NO 2999	SEQ.ID NO 3006	SEQ.ID NO 3013	SEQ.ID NO 3020	SEQ.ID NO 3027	SEQ.ID NO 3034	SEQ.ID NO 3041	SEQ.ID NO 3048	SEQ.ID NO 3055	SEQ.ID NO 3062	SEQ.ID NO 3069	SEQ.ID NO 3076	SEQ.ID NO 3083	SEQ.ID NO 3090	SEQ.ID NO 3097	SEQ.ID NO 3104	SEQ.ID NO 3111	SEQ.ID NO 3118	SEQ.ID NO 3125	SEQ.ID NO 3132	SEQ.ID NO 3139	SEQ.ID NO 3146	SEQ.ID NO 3153	SEQ.ID NO 3160	SEQ.ID NO 3167	SEQ.ID NO 3174	SEQ.ID NO 3181	SEQ.ID NO 3188	SEQ.ID NO 3195	SEQ.ID NO 3202	SEQ.ID NO 3209	SEQ.ID NO 3216	SEQ.ID NO 3223	SEQ.ID NO 3230	SEQ.ID NO 3237	SEQ.ID NO 3244	SEQ.ID NO 3251	SEQ.ID NO 3258	SEQ.ID NO 3265	SEQ.ID NO 3272	SEQ.ID NO 3279	SEQ.ID NO 3286	SEQ.ID NO 3293	SEQ.ID NO 3300	SEQ.ID NO 3307	SEQ.ID NO 3314	SEQ.ID NO 3321	SEQ.ID NO 3328	SEQ.ID NO 3335	SEQ.ID NO 3342	SEQ.ID NO 3349	SEQ.ID NO 3356	SEQ.ID NO 3363	SEQ.ID NO 3370	SEQ.ID NO 3377	SEQ.ID NO 3384	SEQ.ID NO 3391	SEQ.ID NO 3398	SEQ.ID NO 3405	SEQ.ID NO 3412	SEQ.ID NO 3419	SEQ.ID NO 3426	SEQ.ID NO 3433	SEQ.ID NO 3440	SEQ.ID NO 3447	SEQ.ID NO 3454	SEQ.ID NO 3461	SEQ.ID NO 3468	SEQ.ID NO 3475	SEQ.ID NO 3482	SEQ.ID NO 3489	SEQ.ID NO 3496	SEQ.ID NO 3503	SEQ.ID NO 3510	SEQ.ID NO 3517	SEQ.ID NO 3524	SEQ.ID NO 3531	SEQ.ID NO 3538	SEQ.ID NO 3545	SEQ.ID NO 3552	SEQ.ID NO 3559	SEQ.ID NO 3566	SEQ.ID NO 3573	SEQ.ID NO 3580	SEQ.ID NO 3587	SEQ.ID NO 3594	SEQ.ID NO 3601	SEQ.ID NO 3608	SEQ.ID NO 3615	SEQ.ID NO 3622	SEQ.ID NO 3629	SEQ.ID NO 3636	SEQ.ID NO 3643	SEQ.ID NO 3650	SEQ.ID NO 3657	SEQ.ID NO 3664	SEQ.ID NO 3671	SEQ.ID NO 3678	SEQ.ID NO 3685	SEQ.ID NO 3692	SEQ.ID NO 3699	SEQ.ID NO 3706	SEQ.ID NO 3713	SEQ.ID NO 3720	SEQ.ID NO 3727	SEQ.ID NO 3734	SEQ.ID NO 3741	SEQ.ID NO 3748	SEQ.ID NO 3755	SEQ.ID NO 3762	SEQ.ID NO 3769	SEQ.ID NO 3776	SEQ.ID NO 3783	SEQ.ID NO 3790	SEQ.ID NO 3797	SEQ.ID NO 3804	SEQ.ID NO 3811	SEQ.ID NO 3818	SEQ.ID NO 3825	SEQ.ID NO 3832	SEQ.ID NO 3839	SEQ.ID NO 3846	SEQ.ID NO 3853	SEQ.ID NO 3860	SEQ.ID NO 3867	SEQ.ID NO 3874	SEQ.ID NO 3881	SEQ.ID NO 3888	SEQ.ID NO 3895	SEQ.ID NO 3902	SEQ.ID NO 3909	SEQ.ID NO 3916	SEQ.ID NO 3923	SEQ.ID NO 3930	SEQ.ID NO 3937	SEQ.ID NO 3944	SEQ.ID NO 3951	SEQ.ID NO 3958	SEQ.ID NO 3965	SEQ.ID NO 3972	SEQ.ID NO 3979	SEQ.ID NO 3986	SEQ.ID NO 3993	SEQ.ID NO 4000	SEQ.ID NO 4007	SEQ.ID NO 4014	SEQ.ID NO 4021	SEQ.ID NO 4028	SEQ.ID NO 4035	SEQ.ID NO 4042	SEQ.ID NO 4049	SEQ.ID NO 4056	SEQ.ID NO 4063	SEQ.ID NO 4070	SEQ.ID NO 4077	SEQ.ID NO 4084	SEQ.ID NO 4091	SEQ.ID NO 4098	SEQ.ID NO 4105	SEQ.ID NO 4112	SEQ.ID NO 4119	SEQ.ID NO 4126	SEQ.ID NO 4133	SEQ.ID NO 4140	SEQ.ID NO 4147	SEQ.ID NO 4154	SEQ.ID NO 4161	SEQ.ID NO 4168	SEQ.ID NO 4175	SEQ.ID NO 4182	SEQ.ID NO 4189	SEQ.ID NO 4196	SEQ.ID NO 4203	SEQ.ID NO 4210	SEQ.ID NO 4217	SEQ.ID NO 4224	SEQ.ID NO 4231	SEQ.ID NO 4238	SEQ.ID NO 4245	SEQ.ID NO 4252	SEQ.ID NO 4259	SEQ.ID NO 4266	SEQ.ID NO 4273	SEQ.ID NO 4280	SEQ.ID NO 4287	SEQ.ID NO 4294	SEQ.ID NO 4301	SEQ.ID NO 4308	SEQ.ID NO 4315	SEQ.ID NO 4322	SEQ.ID NO 4329	SEQ.ID NO 4336	SEQ.ID NO 4343	SEQ.ID NO 4350	SEQ.ID NO 4357	SEQ.ID NO 4364	SEQ.ID NO 4371	SEQ.ID NO 4378	SEQ.ID NO 4385	SEQ.ID NO 4392	SEQ.ID NO 4399	SEQ.ID NO 4406	SEQ.ID NO 4413	SEQ.ID NO 4420	SEQ.ID NO 4427	SEQ.ID NO 4434	SEQ.ID NO 4441	SEQ.ID NO 4448	SEQ.ID NO 4455	SEQ.ID NO 4462	SEQ.ID NO 4469	SEQ.ID NO 4476	SEQ.ID NO 4483	SEQ.ID NO 4490	SEQ.ID NO 4497	SEQ.ID NO 4504	SEQ.ID NO 4511	SEQ.ID NO 4518	SEQ.ID NO 4525	SEQ.ID NO 4532	SEQ.ID NO 4539	SEQ.ID NO 4546	SEQ.ID NO 4553	SEQ.ID NO 4560	SEQ.ID NO 4567	SEQ.ID NO 4574	SEQ.ID NO 4581	SEQ.ID NO 4588	SEQ.ID NO 4595	SEQ.ID NO 4602	SEQ.ID NO 4609	SEQ.ID NO 4616	SEQ.ID NO 4623	SEQ.ID NO 4630	SEQ.ID NO 4637	SEQ.ID NO 4644	SEQ.ID NO 4651	SEQ.ID NO 4658	SEQ.ID NO 4665	SEQ.ID NO 4672	SEQ.ID NO 4679	SEQ.ID NO 4686	SEQ.ID NO 4693	SEQ.ID NO 4700	SEQ.ID NO 4707	SEQ.ID NO 4714	SEQ.ID NO 4721	SEQ.ID NO 4728	SEQ.ID NO 4735	SEQ.ID NO 4742	SEQ.ID NO 4749	SEQ.ID NO 4756	SEQ.ID NO 4763	SEQ.ID NO 4770	SEQ.ID NO 4777	SEQ.ID NO 4784	SEQ.ID NO 4791	SEQ.ID NO 4798	SEQ.ID NO 4805	SEQ.ID NO 4812	SEQ.ID NO 4819	SEQ.ID NO 4826	SEQ.ID NO 4833	SEQ.ID NO 4840	SEQ.ID NO 4847	SEQ.ID NO 4854	SEQ.ID NO 4861	SEQ.ID NO 4868	SEQ.ID NO 4875	SEQ.ID NO 4882	SEQ.ID NO 4889	SEQ.ID NO 4896	SEQ.ID NO 4903	SEQ.ID NO 4910	SEQ.ID NO 4917	SEQ.ID NO 4924	SEQ.ID NO 4931	SEQ.ID NO 4938	SEQ.ID NO 4945	SEQ.ID NO 4952	SEQ.ID NO 4959	SEQ.ID NO 4966	SEQ.ID NO 4973	SEQ.ID NO 4980	SEQ.ID NO 4987	SEQ.ID NO 4994	SEQ.ID NO 5001	SEQ.ID NO 5008	SEQ.ID NO 5015	SEQ.ID NO 5022	SEQ.ID NO 5029	SEQ.ID NO 5036	SEQ.ID NO 5043	SEQ.ID NO 5050	SEQ.ID NO 5057	SEQ.ID NO 5064	SEQ.ID NO 5071	SEQ.ID NO 5078	SEQ.ID NO 5085	SEQ.ID NO 5092	SEQ.ID NO 5099	SEQ.ID NO 5106	SEQ.ID NO 5113	SEQ.ID NO 5120	SEQ.ID NO 5127	SEQ.ID NO 5134	SEQ.ID NO 5141	SEQ.ID NO 5148	SEQ.ID NO 5155	SEQ.ID NO 5162	SEQ.ID NO 5169	SEQ.ID NO 5176	SEQ.ID NO 5183	SEQ.ID NO 5190	SEQ.ID NO 5197	SEQ.ID NO 5204	SEQ.ID NO 5211	SEQ.ID NO 5218	SEQ.ID NO 5225	SEQ.ID NO 5232	SEQ.ID NO 5239	SEQ.ID NO 5246	SEQ.ID NO 5253	SEQ.ID NO 5260	SEQ.ID NO 5267	SEQ.ID NO 5274	SEQ.ID NO 5281	SEQ.ID NO 5288	SEQ.ID NO 5295	SEQ.ID NO 5302	SEQ.ID NO 5309	SEQ.ID NO 5316	SEQ.ID NO 5323	SEQ.ID NO 5330	SEQ.ID NO 5337	SEQ.ID NO 5344	SEQ.ID NO 5351	SEQ.ID NO 5358	SEQ.ID NO 5365	SEQ.ID NO 5372	SEQ.ID NO 5379	SEQ.ID NO 5386	SEQ.ID NO 5393	SEQ.ID NO 5400	SEQ.ID NO 5407	SEQ.ID NO 5414	SEQ.ID NO 5421	SEQ.ID NO 5428	SEQ.ID NO 5435	SEQ.ID NO 5442	SEQ.ID NO 5449	SEQ.ID NO 5456	SEQ.ID NO 5463	SEQ.ID NO 5470	SEQ.ID NO 5477	SEQ.ID NO 5484	SEQ.ID NO 5491	SEQ.ID NO 5498	SEQ.ID NO 5505	SEQ.ID NO 5512	SEQ.ID NO 5519	SEQ.ID NO 5526	SEQ.ID NO 5533	SEQ.ID NO 5540	SEQ.ID NO 5547	SEQ.ID NO 5554	SEQ.ID NO 5561	SEQ.ID NO 5568	SEQ.ID NO 5575	SEQ.ID NO 5582	SEQ.ID NO 5589	SEQ.ID NO 5596	SEQ.ID NO 5603	SEQ.ID NO 5610	SEQ.ID NO 5617	SEQ.ID NO 5624	SEQ.ID NO 5631	SEQ.ID NO 5638	SEQ.ID NO 5645	SEQ.ID NO 5652	SEQ.ID NO 5659	SEQ.ID NO 5666	SEQ.ID NO 5673	SEQ.ID NO 5680	SEQ.ID NO 5687	SEQ.ID NO 5694	SEQ.ID NO 5701	SEQ.ID NO 5708	SEQ.ID NO 5715	SEQ.ID NO 5722	SEQ.ID NO 5729	SEQ.ID NO 5736	SEQ.ID NO 5743	SEQ.ID NO 5750	SEQ.ID NO 5757	SEQ.ID NO 5764	SEQ.ID NO 5771	SEQ.ID NO 5778	SEQ.ID NO 5785	SEQ.ID NO 5792	SEQ.ID NO 5799	SEQ.ID NO 5806	SEQ.ID NO 5813	SEQ.ID NO 5820	SEQ.ID NO 5827	SEQ.ID NO 5834	SEQ.ID NO 5841	SEQ.ID NO 5848	SEQ.ID NO 5855	SEQ.ID NO 5862	SEQ.ID NO 5869	SEQ.ID NO 5876	SEQ.ID NO 5883	SEQ.ID NO 5890	SEQ.ID NO 5897	SEQ.ID NO 5904	SEQ.ID NO 5911	SEQ.ID NO 5918	SEQ.ID NO 5925	SEQ.ID NO 5932	SEQ.ID NO 5939	SEQ.ID NO 5946	SEQ.ID NO 5953	SEQ.ID NO 5960	SEQ.ID NO 5967	SEQ.ID NO 5974	SEQ.ID NO 5981	SEQ.ID NO 5988	SEQ.ID NO 5995	SEQ.ID NO 6002	SEQ.ID NO 6009	SEQ.ID NO 6016	SEQ.ID NO 6023	SEQ.ID NO 6030	SEQ.ID NO 6037	SEQ.ID NO 6044	SEQ.ID NO 6051	SEQ.ID NO 6058	SEQ.ID NO 6065	SEQ.ID NO 6072	SEQ.ID NO 6079	SEQ.ID NO 6086	SEQ.ID NO 6093	SEQ.ID NO 6100	SEQ.ID NO 6107	SEQ.ID NO 6114	SEQ.ID NO 6121	SEQ.ID NO 6128	SEQ.ID NO 6135	SEQ.ID NO 6142	SEQ.ID NO 6149	SEQ.ID NO 6156	SEQ.ID NO 6163	SEQ.ID NO 6170	SEQ.ID NO 6177	SEQ.ID NO 6184	SEQ.ID NO 6191	SEQ.ID NO 6198	SEQ.ID NO 6205	SEQ.ID NO 6212	SEQ.ID NO 6219	SEQ.ID NO 6226	SEQ.ID NO 6233	SEQ.ID NO 6240	SEQ.ID NO 6247	SEQ.ID NO 6254	SEQ.ID NO 6261	SEQ.ID NO 6268	SEQ.ID NO 6275	SEQ.ID NO 6282	SEQ.ID NO 6289	SEQ.ID NO 6296	SEQ.ID NO 6303	SEQ.ID NO 6310	SEQ.ID NO 6317	SEQ.ID NO 6324	SEQ.ID NO 6331	SEQ.ID NO 6338	SEQ.ID NO 6345	SEQ.ID NO 6352	SEQ.ID NO 6359	SEQ.ID NO 6366	SEQ.ID NO 6373	SEQ.ID NO 6380	SEQ.ID NO 6387	SEQ.ID NO 6394	SEQ.ID NO 6401	SEQ.ID NO 6408	SEQ.ID NO 6415	SEQ.ID NO 6422	SEQ.ID NO 6429	SEQ.ID NO 6436	SEQ.ID NO 6443	SEQ.ID NO 6450	SEQ.ID NO 6457	SEQ.ID NO 6464	SEQ.ID NO 6471	SEQ.ID NO 6478	SEQ.ID NO 6485	SEQ.ID NO 6492	SEQ.ID NO 6499	SEQ.ID NO 6506	SEQ.ID NO 6513	SEQ.ID NO 6520	SEQ.ID NO 6527	SEQ.ID NO 6534	SEQ.ID NO 6541	SEQ.ID NO 6548	SEQ.ID NO 6555	SEQ.ID NO 6562	SEQ.ID NO 6569	SEQ.ID NO 6576	SEQ.ID NO 6583	SEQ.ID NO 6590	SEQ.ID NO 6597	SEQ.ID NO 6604	SEQ.ID NO 6611	SEQ.ID NO 6618	SEQ.ID NO 6625	SEQ.ID NO 6632	SEQ.ID NO 6639	SEQ.ID NO 6646	SEQ.ID NO 6653	SEQ.ID NO 6660	SEQ.ID NO 6667	SEQ.ID NO 6674	SEQ.ID NO 6681	SEQ.ID NO 6688	SEQ.ID NO 6695	SEQ.ID NO 6702	SEQ.ID NO 6709	SEQ.ID NO 6716	SEQ.ID NO 6723	SEQ.ID NO 6730	SEQ.ID NO 6737	SEQ.ID NO 6744	SEQ.ID NO 6751	SEQ.ID NO 6758	SEQ.ID NO 6765	SEQ.ID NO 6772	SEQ.ID NO 6779	SEQ.ID NO 6786	SEQ.ID NO 6793	SEQ.ID NO 6800	SEQ.ID NO 6807	SEQ.ID NO 6814	SEQ.ID NO 6821	SEQ.ID NO 6828	SEQ.ID NO 6835	SEQ.ID NO 6842	SEQ.ID NO 6849	SEQ
---------------	----------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	---------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	-----

Table 1  
BASE NOS 241-300

M38.txt	SEQ ID NO 169	TCGAAACCCCGGAGGGCCGAAACATCGGT	TGATCGGGCTCGCTGT	CGGTGTACGCGCGGG	250
M39.txt	SEQ ID NO 170	TCGAAACCCCGGAGGGCCGAAACATCGGT	TGATCGGGCTCGCTGT	CGGTGTACGCGCGGG	260
M40.txt	SEQ ID NO 171	TCGAAACCCCGGAGGGCCGAAACATCGGT	TGATCGGGCTCGCTGT	CGGTGTACGCGCGGG	270
M41.txt	SEQ ID NO 172	TCGAAACCCCGGAGGGCCGAAACATCGGT	TGATCGGGCTCGCTGT	CGGTGTACGCGCGGG	280
M42.txt	SEQ ID NO 173	TCGAAACCCCGGAGGGCCGAAACATCGGT	TGATCGGGCTCGCTGT	CGGTGTACGCGCGGG	290
M43.txt	SEQ ID NO 174	TCGAAACCCCGGAGGGCCGAAACATCGGT	TGATCGGGCTCGCTGT	CGGTGTACGCGCGGG	300
M44.txt	SEQ ID NO 175	TCGAAACCCCGGAGGGCCGAAACATCGGT	TGATCGGGCTCGCTGT	CGGTGTACGCGCGGG	310
M45.txt	SEQ ID NO 176	TCGAAACCCCGGAGGGCCGAAACATCGGT	TGATCGGGCTCGCTGT	CGGTGTACGCGCGGG	320
M46.txt	SEQ ID NO 177	TCGAAACCCCGGAGGGCCGAAACATCGGT	TGATCGGGCTCGCTGT	CGGTGTACGCGCGGG	330
M47.txt	SEQ ID NO 178	TCGAAACCCCGGAGGGCCGAAACATCGGT	TGATCGGGCTCGCTGT	CGGTGTACGCGCGGG	340
M68(Mav6).txt	SEQ ID NO 179	TCGAAACCCCGGAGGGCCGAAACATCGGT	TGATCGGGCTCGCTGT	CGGTGTACGCGCGGG	350
M89.txt	SEQ ID NO 180	TCGAAACCCCGGAGGGCCGAAACATCGGT	TGATCGGGCTCGCTGT	CGGTGTACGCGCGGG	360
M66(Mav4).txt	SEQ ID NO 181	TCGAAACCCCGGAGGGCCGAAACATCGGT	TGATCGGGCTCGCTGT	CGGTGTACGCGCGGG	370

Table 1  
BASE NOS 301-360

ATCC9-Mtb.txt	SEQ ID NO 1	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
MY621.txt	SEQ ID NO 2	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
Atcc1-av1.txt	SEQ ID NO 3	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M29.txt	SEQ ID NO 4	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M30.txt	SEQ ID NO 5	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M31.txt	SEQ ID NO 6	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M32.txt	SEQ ID NO 7	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M33.txt	SEQ ID NO 8	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M34.txt	SEQ ID NO 9	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M48-new.txt	SEQ ID NO 10	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M49.txt	SEQ ID NO 11	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M64(Mav2).txt	SEQ ID NO 12	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M65(Mav3).txt	SEQ ID NO 13	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M67(Mav5).txt	SEQ ID NO 14	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M69(Mav7).txt	SEQ ID NO 15	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M71(Mav9).txt	SEQ ID NO 16	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M91.txt	SEQ ID NO 17	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M94.txt	SEQ ID NO 18	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M95.txt	SEQ ID NO 19	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M96.txt	SEQ ID NO 20	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M100.txt	SEQ ID NO 21	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M101.txt	SEQ ID NO 22	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M102.txt	SEQ ID NO 23	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M104.txt	SEQ ID NO 24	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M105.txt	SEQ ID NO 25	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M106.txt	SEQ ID NO 26	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
MY111.txt	SEQ ID NO 27	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M76.txt	SEQ ID NO 28	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
MY451.txt	SEQ ID NO 29	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
ATCC2-chelnew.txt	SEQ ID NO 30	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M10.txt	SEQ ID NO 31	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M11-662.txt	SEQ ID NO 32	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M12.txt	SEQ ID NO 33	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M13 2 662.txt	SEQ ID NO 34	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M14.txt	SEQ ID NO 35	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M15.txt	SEQ ID NO 36	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M16.txt	SEQ ID NO 37	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M17 2 662.txt	SEQ ID NO 38	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M50.txt	SEQ ID NO 39	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M51.txt	SEQ ID NO 40	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M115.txt	SEQ ID NO 41	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M116.txt	SEQ ID NO 42	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M119.txt	SEQ ID NO 43	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
MY109.txt	SEQ ID NO 44	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
MY200.txt	SEQ ID NO 45	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
MY207.txt	SEQ ID NO 46	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
MY209.txt	SEQ ID NO 47	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M122.txt	SEQ ID NO 48	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M123.txt	SEQ ID NO 49	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M124.txt	SEQ ID NO 50	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
Atcc3-for.txt	SEQ ID NO 51	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M53.txt	SEQ ID NO 52	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M54.txt	SEQ ID NO 53	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M55.txt	SEQ ID NO 54	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M56.txt	SEQ ID NO 55	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG
M74(Mav12).txt	SEQ ID NO 56	TCAACCCGTTTGGGTTTCATCGA	AACGCCGTTACCGCAAGGTGGT	CGACGGCGTGGT	TAGCG







Table 1  
BASE NOS 301-360

M38.txt	SEQ ID NO 169	TCAACCCCGT	ACGGGTTCAT	GAGACGCC	TACCGCAAGGTGGT	ACGGCGTGGT	ACCG
M39.txt	SEQ ID NO 170	TCAACCCCGT	ACGGGTTCAT	GAGACGCC	TACCGCAAGGTGGT	ACGGCGTGGT	ACCG
M40.txt	SEQ ID NO 171	TCAACCCCGT	ACGGGTTCAT	GAGACGCC	TACCGCAAGGTGGT	ACGGCGTGGT	ACCG
M41.txt	SEQ ID NO 172	TCAACCCCGT	ACGGGTTCAT	GAGACGCC	TACCGCAAGGTGGT	ACGGCGTGGT	ACCG
M42.txt	SEQ ID NO 173	TCAACCCCGT	ACGGGTTCAT	GAGACGCC	TACCGCAAGGTGGT	ACGGCGTGGT	ACCG
M43.txt	SEQ ID NO 174	TCAACCCCGT	ACGGGTTCAT	GAGACGCC	TACCGCAAGGTGGT	ACGGCGTGGT	ACCG
M44.txt	SEQ ID NO 175	TCAACCCCGT	ACGGGTTCAT	GAGACGCC	TACCGCAAGGTGGT	ACGGCGTGGT	ACCG
M45.txt	SEQ ID NO 176	TCAACCCCGT	ACGGGTTCAT	GAGACGCC	TACCGCAAGGTGGT	ACGGCGTGGT	ACCG
M46.txt	SEQ ID NO 177	TCAACCCCGT	ACGGGTTCAT	GAGACGCC	TACCGCAAGGTGGT	ACGGCGTGGT	ACCG
M47.txt	SEQ ID NO 178	TCAACCCCGT	ACGGGTTCAT	GAGACGCC	TACCGCAAGGTGGT	ACGGCGTGGT	ACCG
M68 (Nav6).txt	SEQ ID NO 179	TCAACCCCGT	ACGGGTTCAT	GAGACGCC	TACCGCAAGGTGGT	ACGGCGTGGT	ACCG
M89.txt	SEQ ID NO 180	TCAACCCCGT	ACGGGTTCAT	GAGACGCC	TACCGCAAGGTGGT	ACGGCGTGGT	ACCG
M66 (Nav4).txt	SEQ ID NO 181	TCAACCCCGT	ACGGGTTCAT	GAGACGCC	TACCGCAAGGTGGT	ACGGCGTGGT	ACCG
		310	320	330	340	350	360

**Table 1**  
**BASE NOS 361-420**

[illegible]





Table 1  
BASE NOS 361-420

SEQ ID NO 169	M38. txt	ACGAGATCGTGTACCTGACCGCCGACGAGGAGGACCGCCCA	GTGGTGGC	CAGGCCAACT			
SEQ ID NO 170	M39. txt	ACGAGATCGTGTACCTGACCGCCGACGAGGAGGACCGCCCA	GTGGTGGC	CAGGCCAACT			
SEQ ID NO 171	M40. txt	ACGAGATCGTGTACCTGACCGCCGACGAGGAGGACCGCCCA	GTGGTGGC	CAGGCCAACT			
SEQ ID NO 172	M41. txt	ACGAGATCGTGTACCTGACCGCCGACGAGGAGGACCGCCCA	GTGGTGGC	CAGGCCAACT			
SEQ ID NO 173	M42. txt	ACGAGATCGTGTACCTGACCGCCGACGAGGAGGACCGCCCA	GTGGTGGC	CAGGCCAACT			
SEQ ID NO 174	M43. txt	ACGAGATCGTGTACCTGACCGCCGACGAGGAGGACCGCCCA	GTGGTGGC	CAGGCCAACT			
SEQ ID NO 175	M44. txt	ACGAGATCGTGTACCTGACCGCCGACGAGGAGGACCGCCCA	GTGGTGGC	CAGGCCAACT			
SEQ ID NO 176	M45. txt	ACGAGATCGTGTACCTGACCGCCGACGAGGAGGACCGCCCA	GTGGTGGC	CAGGCCAACT			
SEQ ID NO 177	M46. txt	ACGAGATCGTGTACCTGACCGCCGACGAGGAGGACCGCCCA	GTGGTGGC	CAGGCCAACT			
SEQ ID NO 178	M47. txt	ACGAGATCGTGTACCTGACCGCCGACGAGGAGGACCGCCCA	GTGGTGGC	CAGGCCAACT			
SEQ ID NO 179	M68(Mav6). txt	ACGAGATCGTGTACCTGACCGCCGACGAGGAGGACCGCCCA	GTGGTGGC	CAGGCCAACT			
SEQ ID NO 180	M89. txt	ACGAGATCGTGTACCTGACCGCCGACGAGGAGGACCGCCCA	GTGGTGGC	CAGGCCAACT			
SEQ ID NO 181	M66(Mav4). txt	ACGAGATCGTGTACCTGACCGCCGACGAGGAGGACCGCCCA	GTGGTGGC	CAGGCCAACT			
		370	380	390	400	410	420

SEQ.ID.NO.1	ATCC9-Mtb.txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGGCGGCGGCTGCTGGTCC
SEQ.ID.NO.2	Mf621.txt	GACGGCCAAACGGGCGGCTTCAGCCGAGCCGAGGAGGATGCTGGTCC
SEQ.ID.NO.3	Atcc1-av.txt	GACGGCCAAACGGGCGGCTTCAGCCGAGCCGAGGAGGATGCTGGTCC
SEQ.ID.NO.4		GACGGCCAAACGGGCGGCTTCAGCCGAGCCGAGGAGGATGCTGGTCC
SEQ.ID.NO.5	M29.txt	GACGGCCAAACGGGCGGCTTCAGCCGAGCCGAGGAGGATGCTGGTCC
SEQ.ID.NO.6	M30.txt	GACGGCCAAACGGGCGGCTTCAGCCGAGCCGAGGAGGATGCTGGTCC
SEQ.ID.NO.7	M131.txt	GACGGCCAAACGGGCGGCTTCAGCCGAGCCGAGGAGGATGCTGGTCC
SEQ.ID.NO.8	M32.txt	GACGGCCAAACGGGCGGCTTCAGCCGAGCCGAGGAGGATGCTGGTCC
SEQ.ID.NO.9	M33.txt	GACGGCCAAACGGGCGGCTTCAGCCGAGCCGAGGAGGATGCTGGTCC
SEQ.ID.NO.10	M134.txt	GACGGCCAAACGGGCGGCTTCAGCCGAGCCGAGGAGGATGCTGGTCC
SEQ.ID.NO.11	M48-naw.txt	GACGGCCAAACGGGCGGCTTCAGCCGAGCCGAGGAGGATGCTGGTCC
SEQ.ID.NO.12	M49.txt	GACGGCCAAACGGGCGGCTTCAGCCGAGCCGAGGAGGATGCTGGTCC
SEQ.ID.NO.13	M464 (Mav2).txt	GACGGCCAAACGGGCGGCTTCAGCCGAGCCGAGGAGGATGCTGGTCC
SEQ.ID.NO.14	M465 (Mav3).txt	GACGGCCAAACGGGCGGCTTCAGCCGAGCCGAGGAGGATGCTGGTCC
SEQ.ID.NO.15	M467 (Mav5).txt	GACGGCCAAACGGGCGGCTTCAGCCGAGCCGAGGAGGATGCTGGTCC
SEQ.ID.NO.16	M469 (Mav7).txt	GACGGCCAAACGGGCGGCTTCAGCCGAGCCGAGGAGGATGCTGGTCC
SEQ.ID.NO.17	M471 (Mav9).txt	GACGGCCAAACGGGCGGCTTCAGCCGAGCCGAGGAGGATGCTGGTCC
SEQ.ID.NO.18	M491.txt	GACGGCCAAACGGGCGGCTTCAGCCGAGCCGAGGAGGATGCTGGTCC
SEQ.ID.NO.19	M494.txt	GACGGCCAAACGGGCGGCTTCAGCCGAGCCGAGGAGGATGCTGGTCC
SEQ.ID.NO.20	M495.txt	GACGGCCAAACGGGCGGCTTCAGCCGAGCCGAGGAGGATGCTGGTCC
SEQ.ID.NO.21	M496.txt	GACGGCCAAACGGGCGGCTTCAGCCGAGCCGAGGAGGATGCTGGTCC
SEQ.ID.NO.22	M100.txt	GACGGCCAAACGGGCGGCTTCAGCCGAGCCGAGGAGGATGCTGGTCC
SEQ.ID.NO.23	M101.txt	GACGGCCAAACGGGCGGCTTCAGCCGAGCCGAGGAGGATGCTGGTCC
SEQ.ID.NO.24	M102.txt	GACGGCCAAACGGGCGGCTTCAGCCGAGCCGAGGAGGATGCTGGTCC
SEQ.ID.NO.25	M104.txt	GACGGCCAAACGGGCGGCTTCAGCCGAGCCGAGGAGGATGCTGGTCC
SEQ.ID.NO.26	M105.txt	GACGGCCAAACGGGCGGCTTCAGCCGAGCCGAGGAGGATGCTGGTCC
SEQ.ID.NO.27	M106.txt	GACGGCCAAACGGGCGGCTTCAGCCGAGCCGAGGAGGATGCTGGTCC
SEQ.ID.NO.28	MY111.txt	GACGGCCAAACGGGCGGCTTCAGCCGAGCCGAGGAGGATGCTGGTCC
SEQ.ID.NO.29	M176.txt	GACGGCCAAACGGGCGGCTTCAGCCGAGCCGAGGAGGATGCTGGTCC
SEQ.ID.NO.30	MY451.txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGCGGCTGCTGGTCC
SEQ.ID.NO.31	ATCC2-chelnew.txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGCGGCTGCTGGTCC
SEQ.ID.NO.32	M110.txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGCGGCTGCTGGTCC
SEQ.ID.NO.33	M111-662.txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGCGGCTGCTGGTCC
SEQ.ID.NO.34	M112.txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGCGGCTGCTGGTCC
SEQ.ID.NO.35	M113-2-662.txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGCGGCTGCTGGTCC
SEQ.ID.NO.36	M114.txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGCGGCTGCTGGTCC
SEQ.ID.NO.37	M115.txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGCGGCTGCTGGTCC
SEQ.ID.NO.38	M116.txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGCGGCTGCTGGTCC
SEQ.ID.NO.39	M117-2-662.txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGCGGCTGCTGGTCC
SEQ.ID.NO.40	M150.txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGCGGCTGCTGGTCC
SEQ.ID.NO.41	M151.txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGCGGCTGCTGGTCC
SEQ.ID.NO.42	M115.txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGCGGCTGCTGGTCC
SEQ.ID.NO.43	M116.txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGCGGCTGCTGGTCC
SEQ.ID.NO.44	M119.txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGCGGCTGCTGGTCC
SEQ.ID.NO.45	MY109.txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGCGGCTGCTGGTCC
SEQ.ID.NO.46	MY200.txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGCGGCTGCTGGTCC
SEQ.ID.NO.47	MY207.txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGCGGCTGCTGGTCC
SEQ.ID.NO.48	MY209.txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGCGGCTGCTGGTCC
SEQ.ID.NO.49	M122.txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGCGGCTGCTGGTCC
SEQ.ID.NO.50	M123.txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGCGGCTGCTGGTCC
SEQ.ID.NO.51	M124.txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGCGGCTGCTGGTCC
SEQ.ID.NO.52	Atcc3-for.txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGCGGCTGCTGGTCC
SEQ.ID.NO.53	M53.txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGCGGCTGCTGGTCC
SEQ.ID.NO.54	M54.txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGCGGCTGCTGGTCC
SEQ.ID.NO.55	M55.txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGCGGCTGCTGGTCC
SEQ.ID.NO.56	M56.txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGCGGCTGCTGGTCC
SEQ.ID.NO.57	MY4 (May12).txt	GATGCGGGACGGTTCGGTTCGTCGAGCCGCGCGGCTGCTGGTCC

Table 1  
BASE NOS 421-480

M77.txt	SEQ ID NO 57	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M118.txt	SEQ ID NO 58	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M7221.txt	SEQ ID NO 59	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M7223.txt	SEQ ID NO 60	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M7225.txt	SEQ ID NO 61	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
My341.txt	SEQ ID NO 62	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
My715.txt	SEQ ID NO 63	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
My470.txt	SEQ ID NO 64	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
Atcc4-go.txt	SEQ ID NO 65	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
AtCC4-0-Gord.txt	SEQ ID NO 66	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M78(1z).txt	SEQ ID NO 67	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M79(1d).txt	SEQ ID NO 68	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M80(1g).txt	SEQ ID NO 69	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M81(11).txt	SEQ ID NO 70	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M82(1m).txt	SEQ ID NO 71	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M83(1b).txt	SEQ ID NO 72	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M84(1w).txt	SEQ ID NO 73	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M85(1b).txt	SEQ ID NO 74	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M86(1b).txt	SEQ ID NO 75	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M87(1w).txt	SEQ ID NO 76	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M88(1b).txt	SEQ ID NO 77	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M90(gordDB).txt	SEQ ID NO 78	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M126.txt	SEQ ID NO 79	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M128.txt	SEQ ID NO 80	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
My103.txt	SEQ ID NO 81	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
My475.txt	SEQ ID NO 82	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
My476.txt	SEQ ID NO 83	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
My830.txt	SEQ ID NO 84	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
Atcc5-int.txt	SEQ ID NO 85	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
AtCC5-0-int.txt	SEQ ID NO 86	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M18.txt	SEQ ID NO 87	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M19.txt	SEQ ID NO 88	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M20.txt	SEQ ID NO 89	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M21.txt	SEQ ID NO 90	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M22.txt	SEQ ID NO 91	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M23.txt	SEQ ID NO 92	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M24.txt	SEQ ID NO 93	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M25.txt	SEQ ID NO 94	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M26.txt	SEQ ID NO 95	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M27.txt	SEQ ID NO 96	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M28.txt	SEQ ID NO 97	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M107.txt	SEQ ID NO 98	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
My107.txt	SEQ ID NO 99	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
My112.txt	SEQ ID NO 100	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
My312.txt	SEQ ID NO 101	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
Atcc6-kan.txt	SEQ ID NO 102	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
AtCC6-0kan.txt	SEQ ID NO 103	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M1.txt	SEQ ID NO 104	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M2.txt	SEQ ID NO 105	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M3.txt	SEQ ID NO 106	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M4.txt	SEQ ID NO 107	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M6.txt	SEQ ID NO 108	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M7.txt	SEQ ID NO 109	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M9.txt	SEQ ID NO 110	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M57.txt	SEQ ID NO 111	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M58.txt	SEQ ID NO 112	CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC
M59.txt		CGCCGATC	GAACGCGGACCGGTCGCTTCA	CGAGGCGAGGCGCGGTCG	CGCGGTGATGGTCC



## Table 1

383.0101W

Table 1  
BASE NOS 421-480

M38.txt	SEQ ID NO 169	CGCCGATC	GA	GG	CGCTTC	CGAGCCCGCG	GTGCTGGT	GC
M39.txt	SEQ ID NO 170	CGCCGATC	GA	GG	CGCTTC	CGAGCCCGCG	GTGCTGGT	GC
M40.txt	SEQ ID NO 171	CGCCGATC	GA	GG	CGCTTC	CGAGCCCGCG	GTGCTGGT	GC
M41.txt	SEQ ID NO 172	CGCCGATC	GA	GG	CGCTTC	CGAGCCCGCG	GTGCTGGT	GC
M42.txt	SEQ ID NO 173	CGCCGATC	GA	GG	CGCTTC	CGAGCCCGCG	GTGCTGGT	GC
M43.txt	SEQ ID NO 174	CGCCGATC	GA	GG	CGCTTC	CGAGCCCGCG	GTGCTGGT	GC
M44.txt	SEQ ID NO 175	CGCCGATC	GA	GG	CGCTTC	CGAGCCCGCG	GTGCTGGT	GC
M45.txt	SEQ ID NO 176	CGCCGATC	GA	GG	CGCTTC	CGAGCCCGCG	GTGCTGGT	GC
M46.txt	SEQ ID NO 177	CGCCGATC	GA	GG	CGCTTC	CGAGCCCGCG	GTGCTGGT	GC
M47.txt	SEQ ID NO 178	CGCCGATC	GA	GG	CGCTTC	CGAGCCCGCG	GTGCTGGT	GC
M68 (Mav6).txt	SEQ ID NO 179	CGCCGATC	GA	GG	CGCTTC	CGAGCCCGCG	GTGCTGGT	GC
M89.txt	SEQ ID NO 180	CGCCGATC	GA	GG	CGCTTC	CGAGCCCGCG	GTGCTGGT	GC
M66 (Mav4).txt	SEQ ID NO 181	CGCCGATC	GA	GG	CGCTTC	CGAGCCCGCG	GTGCTGGT	GC
			430	440	450	460	470	480

Table 1  
BASE NOS 481-540[illegible]

Table 1  
BASE NOS 481-540

M77.txt	SEQ ID NO 57	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M118.txt	SEQ ID NO 58	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
MY221.txt	SEQ ID NO 59	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
MY223.txt	SEQ ID NO 60	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
MY225.txt	SEQ ID NO 61	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
MY341.txt	SEQ ID NO 62	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
MY715.txt	SEQ ID NO 63	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
MY470.txt	SEQ ID NO 64	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
Atcc4-go.txt	SEQ ID NO 65	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
ATCC4-0-Gord.tx	SEQ ID NO 66	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M78(1x).txt	SEQ ID NO 67	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M79(jd).txt	SEQ ID NO 68	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M80(1g).txt	SEQ ID NO 69	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M81(1l).txt	SEQ ID NO 70	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M82(1m).txt	SEQ ID NO 71	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M83(mb).txt	SEQ ID NO 72	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M84(ow).txt	SEQ ID NO 73	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M85(1b).txt	SEQ ID NO 74	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M86(1b).txt	SEQ ID NO 75	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M87(wu).txt	SEQ ID NO 76	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M90(gordDB).txt	SEQ ID NO 77	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
m126.txt	SEQ ID NO 78	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M128.txt	SEQ ID NO 79	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
My103.txt	SEQ ID NO 80	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
MY475.txt	SEQ ID NO 81	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
MY476.txt	SEQ ID NO 82	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
MY830.txt	SEQ ID NO 83	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
Atcc5-int.txt	SEQ ID NO 84	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
ATCC5-0int.txt	SEQ ID NO 85	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M18.txt	SEQ ID NO 86	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M19.txt	SEQ ID NO 87	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M20.txt	SEQ ID NO 88	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M21.txt	SEQ ID NO 89	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M22.txt	SEQ ID NO 90	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M23.txt	SEQ ID NO 91	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M24.txt	SEQ ID NO 92	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M25.txt	SEQ ID NO 93	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M26.txt	SEQ ID NO 94	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M27.txt	SEQ ID NO 95	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M28.txt	SEQ ID NO 96	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M107.txt	SEQ ID NO 97	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
MY107.txt	SEQ ID NO 98	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
MY112.txt	SEQ ID NO 99	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
MY312.txt	SEQ ID NO 100	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
Atcc6-kan.txt	SEQ ID NO 101	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
ATCC6-0Kan.txt	SEQ ID NO 102	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M1.txt	SEQ ID NO 103	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M2.txt	SEQ ID NO 104	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M3.txt	SEQ ID NO 105	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M4.txt	SEQ ID NO 106	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M6.txt	SEQ ID NO 107	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M7.txt	SEQ ID NO 108	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M9.txt	SEQ ID NO 109	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M57.txt	SEQ ID NO 110	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M58.txt	SEQ ID NO 111	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT
M59.txt	SEQ ID NO 112	GCCGTTAAAGGGTGGCGAAGGTGGAGAACCGTGGCGCGTGGACTACATGGACGCTCT

**BASE NOS 481-540**

M60.txt	SEQ.ID.NO 113
M61.txt	SEQ.ID.NO 114
M62.txt	SEQ.ID.NO 115
MY106.txt	SEQ.ID.NO 116
MY216.txt	SEQ.ID.NO 117
MY218.txt	SEQ.ID.NO 118
MY226.txt	SEQ.ID.NO 119
M109.txt	SEQ.ID.NO 120
M111.txt	SEQ.ID.NO 121
M112.txt	SEQ.ID.NO 122
M113.txt	SEQ.ID.NO 123
M114.txt	SEQ.ID.NO 124
MY325.txt	SEQ.ID.NO 125
MY718.txt	SEQ.ID.NO 126
MY214.txt	SEQ.ID.NO 127
MY224.txt	SEQ.ID.NO 128
My244.txt	SEQ.ID.NO 129
My339.txt	SEQ.ID.NO 130
My343.txt	SEQ.ID.NO 131
MY458.txt	SEQ.ID.NO 132
MY809.txt	SEQ.ID.NO 133
MY817.txt	SEQ.ID.NO 134
MY821.txt	SEQ.ID.NO 135
MY824.txt	SEQ.ID.NO 136
MY102.txt	SEQ.ID.NO 137
MY105.txt	SEQ.ID.NO 138
MY251.txt	SEQ.ID.NO 139
My256.txt	SEQ.ID.NO 140
My294.txt	SEQ.ID.NO 141
MY354.txt	SEQ.ID.NO 142
Atcc7-secr.txt	SEQ.ID.NO 143
ATCC7-0acr.txt	SEQ.ID.NO 144
MY121.txt	SEQ.ID.NO 145
MY249.txt	SEQ.ID.NO 146
MY372.txt	SEQ.ID.NO 147
MY378.txt	SEQ.ID.NO 148
MY484.txt	SEQ.ID.NO 149
MY556.txt	SEQ.ID.NO 150
MY563.txt	SEQ.ID.NO 151
MY586.txt	SEQ.ID.NO 152
Atcc8-smc.txt	SEQ.ID.NO 153
M35.txt	SEQ.ID.NO 154
M36.txt	SEQ.ID.NO 155
M37.txt	SEQ.ID.NO 156
m125.txt	SEQ.ID.NO 157
MY143.txt	SEQ.ID.NO 158
MY104.txt	SEQ.ID.NO 159
MY196.txt	SEQ.ID.NO 160
MY357.txt	SEQ.ID.NO 161
My358.txt	SEQ.ID.NO 162
My480.txt	SEQ.ID.NO 163
MY212.txt	SEQ.ID.NO 164
MY491.txt	SEQ.ID.NO 165
MY497.txt	SEQ.ID.NO 166
MY816.txt	SEQ.ID.NO 167
my-in-vom.txt	SEQ.ID.NO 168

Table 1  
BASE NOS 481-540

M38. txt	SEQ ID NO 169	GCCGCCAAGGCGTGGGAGGGTGGAGTACGTCCTCTC	490	500	510	520	530	540
M39. txt	SEQ ID NO 170	GCCGCCAAGGCGTGGGAGGGTGGAGTACGTCCTCTC						
M40. txt	SEQ ID NO 171	GCCGCCAAGGCGTGGGAGGGTGGAGTACGTCCTCTC						
M41. txt	SEQ ID NO 172	GCCGCCAAGGCGTGGGAGGGTGGAGTACGTCCTCTC						
M42. txt	SEQ ID NO 173	GCCGCCAAGGCGTGGGAGGGTGGAGTACGTCCTCTC						
M43. txt	SEQ ID NO 174	GCCGCCAAGGCGTGGGAGGGTGGAGTACGTCCTCTC						
M44. txt	SEQ ID NO 175	GCCGCCAAGGCGTGGGAGGGTGGAGTACGTCCTCTC						
M45. txt	SEQ ID NO 176	GCCGCCAAGGCGTGGGAGGGTGGAGTACGTCCTCTC						
M46. txt	SEQ ID NO 177	GCCGCCAAGGCGTGGGAGGGTGGAGTACGTCCTCTC						
M47. txt	SEQ ID NO 178	GCCGCCAAGGCGTGGGAGGGTGGAGTACGTCCTCTC						
M48 (May6). txt	SEQ ID NO 179	GCCGCCAAGGCGTGGGAGGGTGGAGTACGTCCTCTC						
M49. txt	SEQ ID NO 180	GCCGCCAAGGCGTGGGAGGGTGGAGTACGTCCTCTC						
M56 (May4). txt	SEQ ID NO 181	GCCGCCAAGGCGTGGGAGGGTGGAGTACGTCCTCTC						

**BASE NOS 541-600**

SEQ ID NO 1	ATCC3-Mtb.txt	SEQ ID NO 17	SEQ ID NO 31
SEQ ID NO 2	MY621.txt	SEQ ID NO 18	SEQ ID NO 32
SEQ ID NO 3	Atcc1-sv.txt	SEQ ID NO 19	SEQ ID NO 33
SEQ ID NO 4	M29.txt	SEQ ID NO 20	SEQ ID NO 34
SEQ ID NO 5	M30.txt	SEQ ID NO 21	SEQ ID NO 35
SEQ ID NO 6	M31.txt	SEQ ID NO 22	SEQ ID NO 36
SEQ ID NO 7	M32.txt	SEQ ID NO 23	SEQ ID NO 37
SEQ ID NO 8	M33.txt	SEQ ID NO 24	SEQ ID NO 38
SEQ ID NO 9	M34.txt	SEQ ID NO 25	SEQ ID NO 39
SEQ ID NO 10	M48-new.txt	SEQ ID NO 26	SEQ ID NO 40
SEQ ID NO 11	M49.txt	SEQ ID NO 27	SEQ ID NO 41
SEQ ID NO 12	M64(Mav2).txt	SEQ ID NO 28	SEQ ID NO 42
SEQ ID NO 13	M65(Mav3).txt	SEQ ID NO 29	SEQ ID NO 43
SEQ ID NO 14	M67(Mav5).txt	SEQ ID NO 30	SEQ ID NO 44
SEQ ID NO 15	M69(Mav7).txt	SEQ ID NO 31	SEQ ID NO 45
SEQ ID NO 16	M71(Mav9).txt	SEQ ID NO 32	SEQ ID NO 46
SEQ ID NO 17	M91.txt	SEQ ID NO 33	SEQ ID NO 47
SEQ ID NO 18	M94.txt	SEQ ID NO 34	SEQ ID NO 48
SEQ ID NO 19	M95.txt	SEQ ID NO 35	SEQ ID NO 49
SEQ ID NO 20	M96.txt	SEQ ID NO 36	SEQ ID NO 50
SEQ ID NO 21	M100.txt	SEQ ID NO 37	SEQ ID NO 51
SEQ ID NO 22	M101.txt	SEQ ID NO 38	SEQ ID NO 52
SEQ ID NO 23	M102.txt	SEQ ID NO 39	SEQ ID NO 53
SEQ ID NO 24	M104.txt	SEQ ID NO 40	SEQ ID NO 54
SEQ ID NO 25	M105.txt	SEQ ID NO 41	SEQ ID NO 55
SEQ ID NO 26	M106.txt	SEQ ID NO 42	SEQ ID NO 56
SEQ ID NO 27	MY111.txt	SEQ ID NO 43	SEQ ID NO 57
SEQ ID NO 28	M76.txt	SEQ ID NO 44	SEQ ID NO 58
SEQ ID NO 29	MY451.txt	SEQ ID NO 45	SEQ ID NO 59
SEQ ID NO 30	ATCC3-chnelnew.txt	SEQ ID NO 46	SEQ ID NO 60
SEQ ID NO 31	M10.txt	SEQ ID NO 47	SEQ ID NO 61
SEQ ID NO 32	M11-662.txt	SEQ ID NO 48	SEQ ID NO 62
SEQ ID NO 33	M12.txt	SEQ ID NO 49	SEQ ID NO 63
SEQ ID NO 34	M13_2_662.txt	SEQ ID NO 50	SEQ ID NO 64
SEQ ID NO 35	M14.txt	SEQ ID NO 51	SEQ ID NO 65
SEQ ID NO 36	M15.txt	SEQ ID NO 52	SEQ ID NO 66
SEQ ID NO 37	M16.txt	SEQ ID NO 53	SEQ ID NO 67
SEQ ID NO 38	M17_2_662.txt	SEQ ID NO 54	SEQ ID NO 68
SEQ ID NO 39	M50.txt	SEQ ID NO 55	SEQ ID NO 69
SEQ ID NO 40	M51.txt	SEQ ID NO 56	SEQ ID NO 70
SEQ ID NO 41	M115.txt	SEQ ID NO 57	SEQ ID NO 71
SEQ ID NO 42	M116.txt	SEQ ID NO 58	SEQ ID NO 72
SEQ ID NO 43	M119.txt	SEQ ID NO 59	SEQ ID NO 73
SEQ ID NO 44	MY109.txt	SEQ ID NO 60	SEQ ID NO 74
SEQ ID NO 45	MY200.txt	SEQ ID NO 61	SEQ ID NO 75
SEQ ID NO 46	MY207.txt	SEQ ID NO 62	SEQ ID NO 76
SEQ ID NO 47	MY209.txt	SEQ ID NO 63	SEQ ID NO 77
SEQ ID NO 48	M122.txt	SEQ ID NO 64	SEQ ID NO 78
SEQ ID NO 49	M124.txt	SEQ ID NO 65	SEQ ID NO 79
SEQ ID NO 50	Atcc3-for.txt	SEQ ID NO 66	SEQ ID NO 80
SEQ ID NO 51	M53.txt	SEQ ID NO 67	SEQ ID NO 81
SEQ ID NO 52	M54.txt	SEQ ID NO 68	SEQ ID NO 82
SEQ ID NO 53	M55.txt	SEQ ID NO 69	SEQ ID NO 83
SEQ ID NO 54	M56.txt	SEQ ID NO 70	SEQ ID NO 84
SEQ ID NO 55	M14(May12).txt	SEQ ID NO 71	SEQ ID NO 85
SEQ ID NO 56		SEQ ID NO 72	SEQ ID NO 86

[illegible]







Table 1  
BASE NOS 541-600

M38.txt	SEQ ID NO 169	CGCCCGGCCAAGATGGTGTTCGGTGGCCACCGCGATGAT	550	560	570	580	590	600
M39.txt	SEQ ID NO 170	CGCCCGGCCAAGATGGTGTTCGGTGGCCACCGCGATGAT						
M40.txt	SEQ ID NO 171	CGCCCGGCCAAGATGGTGTTCGGTGGCCACCGCGATGAT						
M41.txt	SEQ ID NO 172	CGCCCGGCCAAGATGGTGTTCGGTGGCCACCGCGATGAT						
M42.txt	SEQ ID NO 173	CGCCCGGCCAAGATGGTGTTCGGTGGCCACCGCGATGAT						
M43.txt	SEQ ID NO 174	CGCCCGGCCAAGATGGTGTTCGGTGGCCACCGCGATGAT						
M44.txt	SEQ ID NO 175	CGCCCGGCCAAGATGGTGTTCGGTGGCCACCGCGATGAT						
M45.txt	SEQ ID NO 176	CGCCCGGCCAAGATGGTGTTCGGTGGCCACCGCGATGAT						
M46.txt	SEQ ID NO 177	CGCCCGGCCAAGATGGTGTTCGGTGGCCACCGCGATGAT						
M47.txt	SEQ ID NO 178	CGCCCGGCCAAGATGGTGTTCGGTGGCCACCGCGATGAT						
M48 (May6).txt	SEQ ID NO 179	CGCCCGGCCAAGATGGTGTTCGGTGGCCACCGCGATGAT						
M49.txt	SEQ ID NO 180	CGCCCGGCCAAGATGGTGTTCGGTGGCCACCGCGATGAT						
M56 (May4).txt	SEQ ID NO 181	CGCCCGGCCAAGATGGTGTTCGGTGGCCACCGCGATGAT						

**BASE NOS 600-660**

SEQ ID NO 1	ATCC9-Htb.txt	SEQ ID NO 31	SEQ ID NO 30
SEQ ID NO 2	MY621.txt	SEQ ID NO 32	SEQ ID NO 31
SEQ ID NO 3	Atcc1-av.txt	SEQ ID NO 33	SEQ ID NO 30
SEQ ID NO 4	M29.txt	SEQ ID NO 34	SEQ ID NO 30
SEQ ID NO 5	M30.txt	SEQ ID NO 35	SEQ ID NO 30
SEQ ID NO 6	M31.txt	SEQ ID NO 36	SEQ ID NO 30
SEQ ID NO 7	M32.txt	SEQ ID NO 37	SEQ ID NO 30
SEQ ID NO 8	M33.txt	SEQ ID NO 38	SEQ ID NO 30
SEQ ID NO 9	M34.txt	SEQ ID NO 39	SEQ ID NO 30
SEQ ID NO 10	M48-new.txt	SEQ ID NO 40	SEQ ID NO 30
SEQ ID NO 11	M49.txt	SEQ ID NO 41	SEQ ID NO 30
SEQ ID NO 12	M64 (May2).txt	SEQ ID NO 42	SEQ ID NO 30
SEQ ID NO 13	M65 (May3).txt	SEQ ID NO 43	SEQ ID NO 30
SEQ ID NO 14	M67 (May5).txt	SEQ ID NO 44	SEQ ID NO 30
SEQ ID NO 15	M69 (May7).txt	SEQ ID NO 45	SEQ ID NO 30
SEQ ID NO 16	M71 (May9).txt	SEQ ID NO 46	SEQ ID NO 30
SEQ ID NO 17	M91.txt	SEQ ID NO 47	SEQ ID NO 30
SEQ ID NO 18	M94.txt	SEQ ID NO 48	SEQ ID NO 30
SEQ ID NO 19	M95.txt	SEQ ID NO 49	SEQ ID NO 30
SEQ ID NO 20	M96.txt	SEQ ID NO 50	SEQ ID NO 30
SEQ ID NO 21	M100.txt	SEQ ID NO 51	SEQ ID NO 30
SEQ ID NO 22	M101.txt	SEQ ID NO 52	SEQ ID NO 30
SEQ ID NO 23	M102.txt	SEQ ID NO 53	SEQ ID NO 30
SEQ ID NO 24	M104.txt	SEQ ID NO 54	SEQ ID NO 30
SEQ ID NO 25	M105.txt	SEQ ID NO 55	SEQ ID NO 30
SEQ ID NO 26	M106.txt	SEQ ID NO 56	SEQ ID NO 30
SEQ ID NO 27	MY111.txt	SEQ ID NO 57	SEQ ID NO 30
SEQ ID NO 28	M76.txt	SEQ ID NO 58	SEQ ID NO 30
SEQ ID NO 29	MY451.txt	SEQ ID NO 59	SEQ ID NO 30
SEQ ID NO 30	ATCC2-chelnew.txt	SEQ ID NO 60	SEQ ID NO 30
SEQ ID NO 31	M10.txt	SEQ ID NO 61	SEQ ID NO 30
SEQ ID NO 32	M11-662.txt	SEQ ID NO 62	SEQ ID NO 30
SEQ ID NO 33	M12.txt	SEQ ID NO 63	SEQ ID NO 30
SEQ ID NO 34	M13 2 662.txt	SEQ ID NO 64	SEQ ID NO 30
SEQ ID NO 35	M14.txt	SEQ ID NO 65	SEQ ID NO 30
SEQ ID NO 36	M15.txt	SEQ ID NO 66	SEQ ID NO 30
SEQ ID NO 37	M16.txt	SEQ ID NO 67	SEQ ID NO 30
SEQ ID NO 38	M17 2 662.txt	SEQ ID NO 68	SEQ ID NO 30
SEQ ID NO 39	M50.txt	SEQ ID NO 69	SEQ ID NO 30
SEQ ID NO 40	M51.txt	SEQ ID NO 70	SEQ ID NO 30
SEQ ID NO 41	M115.txt	SEQ ID NO 71	SEQ ID NO 30
SEQ ID NO 42	M116.txt	SEQ ID NO 72	SEQ ID NO 30
SEQ ID NO 43	M119.txt	SEQ ID NO 73	SEQ ID NO 30
SEQ ID NO 44	MY109.txt	SEQ ID NO 74	SEQ ID NO 30
SEQ ID NO 45	MY200.txt	SEQ ID NO 75	SEQ ID NO 30
SEQ ID NO 46	MY207.txt	SEQ ID NO 76	SEQ ID NO 30
SEQ ID NO 47	MY209.txt	SEQ ID NO 77	SEQ ID NO 30
SEQ ID NO 48	M122.txt	SEQ ID NO 78	SEQ ID NO 30
SEQ ID NO 49	M123.txt	SEQ ID NO 79	SEQ ID NO 30
SEQ ID NO 50	M124.txt	SEQ ID NO 80	SEQ ID NO 30
SEQ ID NO 51	Atcc3-fos.txt	SEQ ID NO 81	SEQ ID NO 30
SEQ ID NO 52	M53.txt	SEQ ID NO 82	SEQ ID NO 30
SEQ ID NO 53	M54.txt	SEQ ID NO 83	SEQ ID NO 30
SEQ ID NO 54	M55.txt	SEQ ID NO 84	SEQ ID NO 30
SEQ ID NO 55	M56.txt	SEQ ID NO 85	SEQ ID NO 30
SEQ ID NO 56	MY4 (May12).txt	SEQ ID NO 86	SEQ ID NO 30

Table 1  
BASE NOS 600-660

M77.txt  
 M118.txt  
 M221.txt  
 M223.txt  
 M225.txt  
 M341.txt  
 M715.txt  
 M740.txt  
 Atcc4-go.txt  
 Atcc4-0-Gord.txt  
 M78(1x).txt  
 M79(3d).txt  
 M80(1g).txt  
 M81(11).txt  
 M82(2m).txt  
 M83(mb).txt  
 M84(ow).txt  
 M85(1b).txt  
 M86(xb).txt  
 M87(wt).txt  
 M90(gordDB).txt  
 m126.txt  
 M128.txt  
 M103.txt  
 M475.txt  
 M476.txt  
 M4830.txt  
 Atcc5-int.txt  
 ATCC5-0int.txt  
 M18.txt  
 M19.txt  
 M20.txt  
 M21.txt  
 M22.txt  
 M23.txt  
 M24.txt  
 M25.txt  
 M26.txt  
 M27.txt  
 M28.txt  
 M107.txt  
 M107.txt  
 M112.txt  
 M312.txt  
 Atcc6-kan.txt  
 ATCC6-0Kan.txt  
 M1.txt  
 M2.txt  
 M3.txt  
 M4.txt  
 M6.txt  
 M7.txt  
 M9.txt  
 M57.txt  
 M58.txt  
 M59.txt

SEQ ID NO 57  
 SEQ ID NO 58  
 SEQ ID NO 59  
 SEQ ID NO 60  
 SEQ ID NO 61  
 SEQ ID NO 62  
 SEQ ID NO 63  
 SEQ ID NO 64  
 SEQ ID NO 65  
 SEQ ID NO 66  
 SEQ ID NO 67  
 SEQ ID NO 68  
 SEQ ID NO 69  
 SEQ ID NO 70  
 SEQ ID NO 71  
 SEQ ID NO 72  
 SEQ ID NO 73  
 SEQ ID NO 74  
 SEQ ID NO 75  
 SEQ ID NO 76  
 SEQ ID NO 77  
 SEQ ID NO 78  
 SEQ ID NO 79  
 SEQ ID NO 80  
 SEQ ID NO 81  
 SEQ ID NO 82  
 SEQ ID NO 83  
 SEQ ID NO 84  
 SEQ ID NO 85  
 SEQ ID NO 86  
 SEQ ID NO 87  
 SEQ ID NO 88  
 SEQ ID NO 89  
 SEQ ID NO 90  
 SEQ ID NO 91  
 SEQ ID NO 92  
 SEQ ID NO 93  
 SEQ ID NO 94  
 SEQ ID NO 95  
 SEQ ID NO 96  
 SEQ ID NO 97  
 SEQ ID NO 98  
 SEQ ID NO 99  
 SEQ ID NO 100  
 SEQ ID NO 101  
 SEQ ID NO 102  
 SEQ ID NO 103  
 SEQ ID NO 104  
 SEQ ID NO 105  
 SEQ ID NO 106  
 SEQ ID NO 107  
 SEQ ID NO 108  
 SEQ ID NO 109  
 SEQ ID NO 110  
 SEQ ID NO 111  
 SEQ ID NO 112

## Table 1

M60.txt  
M61.txt  
M62.txt  
My106.txt  
My216.txt  
My218.txt  
My226.txt  
M109.txt  
M111.txt  
M112.txt  
M113.txt  
M114.txt  
My325.txt  
My718.txt  
My214.txt  
My224.txt  
My244.txt  
My339.txt  
My343.txt  
My458.txt  
My809.txt  
My817.txt  
My821.txt  
My824.txt  
My102.txt  
My105.txt  
My251.txt  
My256.txt  
My294.txt  
My354.txt  
ATcc7-sgr  
ATCC7-09c  
My121.txt  
My249.txt  
My372.txt  
My378.txt  
My484.txt  
My556.txt  
My563.txt  
My586.txt  
Atcc8-amo  
M35.txt  
M36.txt  
M37.txt  
m125.txt  
My104.txt  
My196.txt  
My357.txt  
My358.txt  
My480.txt  
My212.txt  
My491.txt  
My497.txt  
My816.txt

*[The page contains a large grid of repeating text patterns, likely a placeholder or a test document. The text is mostly illegible due to extreme blurring and low resolution.]*

## Table 1

	610	620	630	640	650	660
SEQ.ID NO 169	C	A	A	C	T	G
SEQ.ID NO 170	C	A	A	C	T	G
SEQ.ID NO 171	C	A	A	C	T	G
SEQ.ID NO 172	C	A	A	C	T	G
SEQ.ID NO 173	C	A	A	C	T	G
SEQ.ID NO 174	C	A	A	C	T	G
SEQ.ID NO 175	C	A	A	C	T	G
SEQ.ID NO 176	C	A	A	C	T	G
SEQ.ID NO 177	C	A	A	C	T	G
SEQ.ID NO 178	C	A	A	C	T	G
SEQ.ID NO 179	C	A	A	C	T	G
SEQ.ID NO 180	C	A	A	C	T	G
SEQ.ID NO 181	C	A	A	C	T	G

**BASE NOS 660-720**

[illegible]

Table 1  
BASE NOS 660-720

M77.txt	SEQ ID NO 57	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M118.txt	SEQ ID NO 58	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
MY221.txt	SEQ ID NO 59	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
MY223.txt	SEQ ID NO 60	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
MY225.txt	SEQ ID NO 61	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
MY341.txt	SEQ ID NO 62	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
MY715.txt	SEQ ID NO 63	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
MY470.txt	SEQ ID NO 64	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
Atcc4-go.txt	SEQ ID NO 65	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
ATCC4-0-Gord.txt	SEQ ID NO 66	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M78(1z).txt	SEQ ID NO 67	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M79(jd).txt	SEQ ID NO 68	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M80(lg).txt	SEQ ID NO 69	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M81(11).txt	SEQ ID NO 70	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M82(rn).txt	SEQ ID NO 71	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M83(mb).txt	SEQ ID NO 72	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M84(ow).txt	SEQ ID NO 73	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M85(lb).txt	SEQ ID NO 74	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M86(rb).txt	SEQ ID NO 75	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M87(wr).txt	SEQ ID NO 76	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M90(gordDB).txt	SEQ ID NO 77	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
m126.txt	SEQ ID NO 78	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M128.txt	SEQ ID NO 79	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
MY103.txt	SEQ ID NO 80	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
MY475.txt	SEQ ID NO 81	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
MY476.txt	SEQ ID NO 82	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
MY930.txt	SEQ ID NO 83	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
Atcc5-int.txt	SEQ ID NO 84	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
ATCC5-0int.txt	SEQ ID NO 85	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M18.txt	SEQ ID NO 86	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M19.txt	SEQ ID NO 87	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M20.txt	SEQ ID NO 88	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M21.txt	SEQ ID NO 89	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M22.txt	SEQ ID NO 90	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M23.txt	SEQ ID NO 91	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M24.txt	SEQ ID NO 92	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M25.txt	SEQ ID NO 93	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M26.txt	SEQ ID NO 94	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M27.txt	SEQ ID NO 95	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M28.txt	SEQ ID NO 96	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
MY107.txt	SEQ ID NO 97	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
MY107.txt	SEQ ID NO 98	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
MY112.txt	SEQ ID NO 99	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
MY312.txt	SEQ ID NO 100	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
Atcc6-kan.txt	SEQ ID NO 101	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
ATCC6-0Kan.txt	SEQ ID NO 102	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M1.txt	SEQ ID NO 103	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M2.txt	SEQ ID NO 104	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M3.txt	SEQ ID NO 105	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M4.txt	SEQ ID NO 106	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M6.txt	SEQ ID NO 107	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M7.txt	SEQ ID NO 108	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M9.txt	SEQ ID NO 109	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M57.txt	SEQ ID NO 110	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
M58.txt	SEQ ID NO 111	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT
nan.txt	SEQ ID NO 112	AGGCCCGGCTGGTGGGACCGGATGGAGCTGCGCGCGGCGGATCGACGCGGCGACGT





Table 1  
BASE NOS 660-720

M38. txt	SEQ ID NO 169	AGGC	CCGCTGGTGGGCA	CCGGGATGGA	TGCGCGCGGCGATCGACGCGGCGGACCGT	670
M39. txt	SEQ ID NO 170	AGGC	CCGCTGGTGGGCA	CCGGGATGGA	TGCGCGCGGCGATCGACGCGGCGGACCGT	680
M40. txt	SEQ ID NO 171	AGGC	CCGCTGGTGGGCA	CCGGGATGGA	TGCGCGCGGCGATCGACGCGGCGGACCGT	690
M41. txt	SEQ ID NO 172	AGGC	CCGCTGGTGGGCA	CCGGGATGGA	TGCGCGCGGCGATCGACGCGGCGGACCGT	700
M42. txt	SEQ ID NO 173	AGGC	CCGCTGGTGGGCA	CCGGGATGGA	TGCGCGCGGCGATCGACGCGGCGGACCGT	710
M43. txt	SEQ ID NO 174	AGGC	CCGCTGGTGGGCA	CCGGGATGGA	TGCGCGCGGCGATCGACGCGGCGGACCGT	720
M44. txt	SEQ ID NO 175	AGGC	CCGCTGGTGGGCA	CCGGGATGGA	TGCGCGCGGCGATCGACGCGGCGGACCGT	
M45. txt	SEQ ID NO 176	AGGC	CCGCTGGTGGGCA	CCGGGATGGA	TGCGCGCGGCGATCGACGCGGCGGACCGT	
M46. txt	SEQ ID NO 177	AGGC	CCGCTGGTGGGCA	CCGGGATGGA	TGCGCGCGGCGATCGACGCGGCGGACCGT	
M47. txt	SEQ ID NO 178	AGGC	CCGCTGGTGGGCA	CCGGGATGGA	TGCGCGCGGCGATCGACGCGGCGGACCGT	
M68(Mav6). txt	SEQ ID NO 179	AGGC	CCGCTGGTGGGCA	CCGGGATGGA	TGCGCGCGGCGATCGACGCGGCGGACCGT	
M89. txt	SEQ ID NO 180	AGGC	CCGCTGGTGGGCA	CCGGGATGGA	TGCGCGCGGCGATCGACGCGGCGGACCGT	
M66(Mav4). txt	SEQ ID NO 181	AGGC	CCGCTGGTGGGCA	CCGGGATGGA	TGCGCGCGGCGATCGACGCGGCGGACCGT	

Table 2

Affy#	SAMPLE ID#	Alt. ID	SPECIES
MY621		ATCC	<i>M. abscessus</i>
ATCC1	25291	ATCC-av	<i>M. avium</i>
M100	60300	MAC	<i>M. avium</i>
M101	60112	MAC	<i>M. avium</i>
M102	60268	MAC	<i>M. avium</i>
M103	60270	MAC	<i>M. avium</i>
M104	60272	MAC	<i>M. avium</i>
M105	60293	MAC	<i>M. avium</i>
M106	60313	MAC	<i>M. avium</i>
M107	60345	MAC	<i>M. avium</i>
M29	95-1784		<i>M. avium</i>
M30	95-1786		<i>M. avium</i>
M31	95-1788		<i>M. avium</i>
M32	95-1770		<i>M. avium</i>
M33	95-1775		<i>M. avium</i>
M34	95-1776		<i>M. avium</i>
M48	95-1765		<i>M. avium</i>
M49	95-1769		<i>M. avium</i>
M63	MAC #1	MAC	<i>M. avium</i>
M64	MAC #2	MAC	<i>M. avium</i>
M65	MAC #3	MAC	<i>M. avium</i>
M67	MAC #5	MAC	<i>M. avium</i>
M69	MAC #7	MAC	<i>M. avium</i>
M70	MAC #8	MAC	<i>M. avium</i>
M71	MAC #9	MAC	<i>M. avium</i>
M72	MAC #10	MAC	<i>M. avium</i>
M91	FM	<i>avium-intracell. FM(MAC)</i>	<i>M. avium</i>
M92	60040	MAC	<i>M. avium</i>
M93	60042	MAC	<i>M. avium</i>
M94	60049	MAC	<i>M. avium</i>
M95	60051	MAC	<i>M. avium</i>
M96	60110	MAC	<i>M. avium</i>
M97	60116	MAC	<i>M. avium</i>
M98	60123	MAC	<i>M. avium</i>
M99	60176	MAC	<i>M. avium</i>
M76	92-773		<i>M. bovis</i>
MY451			<i>M. bovis</i>
ATCC2	35752	ATCC-chel(new)	<i>M. chelonae</i>
M10	95A8151		<i>M. chelonae</i>
M11	95A0477		<i>M. chelonae</i>
M115	60121		<i>M. chelonae</i>
M116	52842		<i>M. chelonae</i>
M117	43192		<i>M. chelonae</i>
M118	53180		<i>M. chelonae</i>
M119	53131		<i>M. chelonae</i>
M12	95A4883		<i>M. chelonae</i>
M120	52923		<i>M. chelonae</i>
M121	52919		<i>M. chelonae</i>
M13	95A2611		<i>M. chelonae</i>
M14	95A0779		<i>M. chelonae</i>
M15	95A8654		<i>M. chelonae</i>
M16	95A8882		<i>M. chelonae</i>
M17	95A8881		<i>M. chelonae</i>
M50	95A11814		<i>M. chelonae</i>
M51	95A1102		<i>M. chelonae</i>
M75	#13	MAC#13	<i>M. chelonae</i>
MY109			<i>M. chelonae</i>
MY200			<i>M. chelonae</i>

Table 2

MY207			<i>M. chelonae</i>
MY209			<i>M. chelonae</i>
M122	60025		<i>M. flavesceus</i>
M123	60078		<i>M. flavesceus</i>
M124	60252		<i>M. flavesceus</i>
ATCC3	6841	ATCC-for	<i>M. fortuitum</i>
M53	60305		<i>M. fortuitum</i>
M54	60344		<i>M. fortuitum</i>
M55	60435		<i>M. fortuitum</i>
M56	60447		<i>M. fortuitum</i>
M74	#12	MAC#12	<i>M. fortuitum</i>
M88	CH	fort. CH	<i>M. fortuitum</i>
MY221			<i>M. fortuitum</i>
MY223			<i>M. fortuitum</i>
MY225			<i>M. fortuitum</i>
MY341			<i>M. fortuitum</i>
MY715			<i>M. fortuitum</i>
MY470			<i>M. genevieve</i>
ATCC4	14470	ATCC-go	<i>M. gordonae</i>
ATCC4-0		gord.	<i>M. gordonae</i>
M125	60068		<i>M. gordonae</i>
M126	60182		<i>M. gordonae</i>
M127	60214		<i>M. gordonae</i>
M128	60283		<i>M. gordonae</i>
M78	92-842	gord. LZ	<i>M. gordonae</i>
M79	93-692	gord. JD	<i>M. gordonae</i>
M80	94-84	gord. LG	<i>M. gordonae</i>
M81	93-1231	gord. LL	<i>M. gordonae</i>
M82	93-463	gord. RM	<i>M. gordonae</i>
M83	92-1219	gord. MB	<i>M. gordonae</i>
M84	91-1131	gord. OW	<i>M. gordonae</i>
M85	91-1478	gord. LB	<i>M. gordonae</i>
M86	92-842	gord. RB	<i>M. gordonae</i>
M87	93-1180	gord. WN	<i>M. gordonae</i>
M90	DB	gord. DB	<i>M. gordonae</i>
MY103			<i>M. gordonae</i>
MY475			<i>M. gordonae</i>
MY476			<i>M. gordonae</i>
MY746			<i>M. gordonae</i>
MY830			<i>M. gordonae</i>
ATCC5		ATCC-int	<i>M. intracellulare</i>
ATCC5-0		intra	<i>M. intracellulare</i>
M18	95-1778		<i>M. intracellulare</i>
M19	95-1780		<i>M. intracellulare</i>
M20	95-1781		<i>M. intracellulare</i>
M21	95-1782		<i>M. intracellulare</i>
M22	95-1790		<i>M. intracellulare</i>
M23	95-1794		<i>M. intracellulare</i>
M24	95-1796		<i>M. intracellulare</i>
M25	95-1777		<i>M. intracellulare</i>
M26	95-1779		<i>M. intracellulare</i>
M27	95-1780		<i>M. intracellulare</i>
M28	95-1781		<i>M. intracellulare</i>
ATCC6	12478	ATCC-kan	<i>M. kansasii</i>
ATCC6-0		kan.	<i>M. kansasii</i>
M1	95A5375		<i>M. kansasii</i>
M2	95A10299		<i>M. kansasii</i>
M3	96A0020		<i>M. kansasii</i>
M4	95A3977		<i>M. kansasii</i>

Table 2

M5	95A4739		<i>M. kansasii</i>
M52	95A5381		<i>M. kansasii</i>
M57	60183		<i>M. kansasii</i>
M58	60180		<i>M. kansasii</i>
M59	60207		<i>M. kansasii</i>
M6	95A2695		<i>M. kansasii</i>
M60	60294		<i>M. kansasii</i>
M61	60308		<i>M. kansasii</i>
M62	60314		<i>M. kansasii</i>
M7	95A2694		<i>M. kansasii</i>
M73	#11	MAC#11	<i>M. kansasii</i>
M8	94A9042		<i>M. kansasii</i>
M9	95A1275		<i>M. kansasii</i>
MY106			<i>M. kansasii</i>
MY141			<i>M. kansasii</i>
MY216			<i>M. kansasii</i>
MY218			<i>M. kansasii</i>
MY228			<i>M. kansasii</i>
M108	60044		<i>M. malmoense</i>
M109	60149		<i>M. malmoense</i>
M110	60211		<i>M. malmoense</i>
M111	60202		<i>M. malmoense</i>
M112	60085		<i>M. malmoense</i>
M113	60047		<i>M. malmoense</i>
M114	60185		<i>M. malmoense</i>
MY325		ATCC	<i>M. malmoense</i>
MY718		malmo	<i>M. malmoense</i>
MY214			<i>M. marinum</i>
MY224			<i>M. marinum</i>
MY244			<i>M. marinum</i>
MY339			<i>M. marinum</i>
MY343			<i>M. marinum</i>
MY458		ATCC	<i>M. mucogenicum</i>
MY809			<i>M. mucogenicum</i>
MY817			<i>M. mucogenicum</i>
MY821			<i>M. mucogenicum</i>
MY824			<i>M. mucogenicum</i>
MY102			<i>M. nonchromogenicum</i>
MY105			<i>M. nonchromogenicum</i>
MY251			<i>M. nonchromogenicum</i>
MY258			<i>M. nonchromogenicum</i>
MY294			<i>M. nonchromogenicum</i>
ATCC7	19981	ATCC-ecr	<i>M. scrofulaceum</i>
ATCC7-0		scrof.	<i>M. scrofulaceum</i>
MY121			<i>M. scrofulaceum</i>
MY249			<i>M. scrofulaceum</i>
MY372			<i>M. scrofulaceum</i>
MY378			<i>M. scrofulaceum</i>
MY484			<i>M. simiae</i>
MY556			<i>M. simiae</i>
MY563			<i>M. simiae</i>
MY586			<i>M. simiae</i>
ATCC8	19420	ATCC-smo	<i>M. smegmatis</i>
M35	95A1072		<i>M. smegmatis</i>
M36	95A8183		<i>M. smegmatis</i>
M37	95A4990		<i>M. smegmatis</i>
M77	92-144	smeg. JL	<i>M. smegmatis</i>
MY143		ATCC	<i>M. smegmatis</i>
MY104			<i>M. szulgai</i>

Table 2

MY196			<i>M. szulgai</i>
MY357			<i>M. szulgai</i>
MY358			<i>M. szulgai</i>
MY480			<i>M. szulgai</i>
TB74	C.17.96.5		<i>M. tb</i> M160 DR
MY387			<i>M. tb</i>
MY418			<i>M. tb</i>
MY437			<i>M. tb</i>
MY482			<i>M. tb</i>
TB59	C.18.96.1		<i>M. tb</i> H37rv DR
TB67	C.18.96.1		<i>M. tb</i> H37rv DR
TB73	C.17.96.1		<i>M. tb</i> H37rv DR
TB60	C.18.96.2		<i>M. tb</i> J35 DR
TB65	C.22.96.6		<i>M. tb</i> M101 DR
TB62	C.18.96.4		<i>M. tb</i> M104 DR
TB69	C.18.96.3		<i>M. tb</i> M104 DR
TB72	C.18.96.7		<i>M. tb</i> M104DR
TB68	C.22.96.10		<i>M. tb</i> M112 DR
TB83	C.18.96.5		<i>M. tb</i> M140 DR
TB64	C.18.96.6		<i>M. tb</i> M160 DR
TB70	C.18.96.4		<i>M. tb</i> M160 DR
TB81	C.18.96.3		<i>M. tb</i> M60 DR
TB68	C.18.96.2		<i>M. tb</i> M60 DR
TB71	C.18.96.6		<i>M. tb</i> M60 DR
MY212			<i>M. terrae</i>
MY354			<i>M. terrae</i>
MY491			<i>M. terrae</i>
MY497			<i>M. terrae</i>
MY816			<i>M. triplex</i>
ATCC9	27294	Mtb	<i>M. tuberculosis</i>
ATCC9-0		TB2020	<i>M. tuberculosis</i>
N/A	93-1071		<i>M. tuberculosis</i>
N/A	93-338		<i>M. tuberculosis</i>
N/A	92-852		<i>M. tuberculosis</i>
N/A	92-1005		<i>M. tuberculosis</i>
N/A	92-243		<i>M. tuberculosis</i>
N/A	92-304		<i>M. tuberculosis</i>
N/A	92-199		<i>M. tuberculosis</i>
N/A	92-197		<i>M. tuberculosis</i>
N/A	92-484		<i>M. tuberculosis</i>
N/A	94-577		<i>M. tuberculosis</i>
TB1	936		<i>M. tuberculosis</i>
TB10	1122		<i>M. tuberculosis</i>
TB11	3407		<i>M. tuberculosis</i>
TB12	978		<i>M. tuberculosis</i>
TB13	3553		<i>M. tuberculosis</i>
TB14	3466		<i>M. tuberculosis</i>
TB15	2183		<i>M. tuberculosis</i>
TB16	DW	DW	<i>M. tuberculosis</i>
TB17	CB	CB	<i>M. tuberculosis</i>
TB18	PB	PB	<i>M. tuberculosis</i>
TB19	AA	AA	<i>M. tuberculosis</i>
TB2	M0404A		<i>M. tuberculosis</i>
TB20	3492		<i>M. tuberculosis</i>
TB21	1435		<i>M. tuberculosis</i>
TB22	696		<i>M. tuberculosis</i>
TB23	2268		<i>M. tuberculosis</i>
TB24	3455		<i>M. tuberculosis</i>
TB25	37		<i>M. tuberculosis</i>

Table 2

TB26	173		<i>M. tuberculosis</i>
TB27	230		<i>M. tuberculosis</i>
TB28	2519		<i>M. tuberculosis</i>
TB29	T29233		<i>M. tuberculosis</i>
TB3	1231		<i>M. tuberculosis</i>
TB30	SP	SP	<i>M. tuberculosis</i>
TB31	3201		<i>M. tuberculosis</i>
TB32	3219		<i>M. tuberculosis</i>
TB33	80		<i>M. tuberculosis</i>
TB34	3442		<i>M. tuberculosis</i>
TB35	3502		<i>M. tuberculosis</i>
TB36	3759		<i>M. tuberculosis</i>
TB37	1295		<i>M. tuberculosis</i>
TB38	337		<i>M. tuberculosis</i>
TB39	384		<i>M. tuberculosis</i>
TB4	914		<i>M. tuberculosis</i>
TB40	499		<i>M. tuberculosis</i>
TB41	535		<i>M. tuberculosis</i>
TB42	607		<i>M. tuberculosis</i>
TB43	707		<i>M. tuberculosis</i>
TB44	692		<i>M. tuberculosis</i>
TB45	2408		<i>M. tuberculosis</i>
TB46	1069		<i>M. tuberculosis</i>
TB47	M3282A		<i>M. tuberculosis</i>
TB48	1336		<i>M. tuberculosis</i>
TB49	1388		<i>M. tuberculosis</i>
TB5	1145		<i>M. tuberculosis</i>
TB50	65		<i>M. tuberculosis</i>
TB51	727		<i>M. tuberculosis</i>
TB52	3455		<i>M. tuberculosis</i>
TB53	3508		<i>M. tuberculosis</i>
TB54	9600367		<i>M. tuberculosis</i>
TB55	9600173		<i>M. tuberculosis</i>
TB56	9503471		<i>M. tuberculosis</i>
TB57	9600309		<i>M. tuberculosis</i>
TB58	9600230		<i>M. tuberculosis</i>
TB6	1417		<i>M. tuberculosis</i>
TB7	SM2341		<i>M. tuberculosis</i>
TB75	2086		<i>M. tuberculosis</i>
TB76	173/1		<i>M. tuberculosis</i>
TB77	1122/1		<i>M. tuberculosis</i>
TB78	1417/1		<i>M. tuberculosis</i>
TB8	1587		<i>M. tuberculosis</i>
TB9	M7032A		<i>M. tuberculosis</i>
ATCC10	19250	ATCC-xen	<i>M. xenopi</i>
M129	60133		<i>M. xenopi</i>
M130	60200		<i>M. xenopi</i>
M131	60365		<i>M. xenopi</i>
M132	60367		<i>M. xenopi</i>
M38	95A5208		<i>M. xenopi</i>
M39	95A5399		<i>M. xenopi</i>
M40	95A3938		<i>M. xenopi</i>
M41	95A6782		<i>M. xenopi</i>
M42	95A0933		<i>M. xenopi</i>
M43	95A4320		<i>M. xenopi</i>
M44	95A3478		<i>M. xenopi</i>
M45	95A2997		<i>M. xenopi</i>
M46	95A8383		<i>M. xenopi</i>
M47	95A4319		<i>M. xenopi</i>

Table 2

M88	MAC #8	MAC #8	<i>M. xenopi</i>
M89	SG	xen. SG	<i>M. xenopi</i>
MY219			<i>M. xenopi</i>
MY250			<i>M. xenopi</i>
MY252			<i>M. xenopi</i>
MY254			<i>M. xenopi</i>
MY255			<i>M. xenopi</i>
MY107			MAC
MY111			MAC
MY112			MAC
MY312			MAC
M88	MAC #4	MAC #4	unique